

Exhibit 41

No.	STATEMENT	AGREE	DISAGREE	DON'T KNOW/ NO OPINION
1	Given the number of hazard ratios reported in the literature between 1.1 of 1.4 in both case-control and cohort studies, it is disingenuous to state that there is no evidence that talc is associated with ovarian cancer.		X	
2	If 40% of women use talc and the relative risk is 1.2, then 7% of ovarian cancer cases would be attributable to talc use or 1577 cases a year in the USA. This is not a trivial number and should not be dismissed.		X	
3	Genital powder use is a modifiable exposure associated with small-to-moderate increases in risk of most histologic subtypes of epithelial ovarian cancer.		X	
4	Perineal use of talc-based (non-asbestiform) body powder is possibly carcinogenic to humans (Group 2B).		X	
5	The use of perineal talcum powder has been associated with a 20 to 30 percent increased risk of ovarian cancer, although it also has been shown to vary by histologic subtype.		X	
6	A lot of work has been done to clarify the risk reduction of various lifestyle approaches, such as alcohol, obesity, cigarette smoking, and talc use. Some of these are subtype specific, such as endometriosis, cigarette smoking, and obesity, while others are general risk factors. Use of talc in the genital area has consistently been shown to increase the risk of OC and therefore is not recommended.		X	
7	Inflammatory risk factors for EOC are perineal talc exposure, endometriosis, and pelvic inflammatory disease.		X	
8	In this article, we define simple cases to help physicians and women with attributed risk for ovarian cancer that identified these risk factors to be considered: parity, oral contraceptive use, breastfeeding, tubal ligation, <u>painful periods</u> or endometriosis, <u>obesity</u> or polycystic ovarian syndrome, and talc use. These risk factors are concordant with published epidemiologic data related to reproductive factors, use of talc, tubal ligation, endometriosis, and polycystic ovarian syndrome or obesity.		X	

EXHIBIT

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9	The large number of participants in our study allowed examination of associations between several human gynecologic conditions and ovarian cancer, adjusting for multiple confounders and known risk factors. It is possible that talc powder use is highly prevalent in the African-American community and has been found to be associated with increased risk of ovarian cancer in this and other studies.		X	
10	Most women report using Johnson's Baby Powder or Shower to Shower.			X
11	The average age women begin using talc is 20.			X
12	In the interests of public health, I believe we should caution women against using genital talcum powder.		X	
13	Genital powder use is a lifestyle risk factor for all serous, endometrioid, and clear cell histologic subtypes of ovarian cancer.		X	
14	Overall, there is an association between genital talc use and EOC and a significant trend with increasing "talc years" of use.		X	
15	Talc-containing powders are hypothesized to promote cancer development by ascending the female genital tract and interacting directly with the ovarian surface epithelium, leading to local inflammation characterized by increased rates of cell division, DNA repair, oxidative stress, and elevated inflammatory cytokines.	X		
16	Following perineal application, talc particles can migrate from the vagina to the peritoneal cavity and ovaries.		X	
17	A majority of women experience retrograde menstruation; this suggests a mechanism by which talc particles can travel through the female reproductive tract to the peritoneal cavity and ovaries.		X	
18	It is possible that the passage of talc is aided by retrograde menses and that talc use during menses poses a special risk.		X	

No.	STATEMENT	AGREE	DISAGREE	DON'T KNOW/ NO OPINION
19	Biologic credibility of the talc/EOC association is enhanced by persuasive evidence that inert particles the size of talc, present in the vagina, can migrate to the upper genital tract.		X	
20	The vagina serves as a portal to the internal reproductive tract.	X		
21	The vagina is a musculoepithelial tube extending from the level of the external genitals to the cervical portion of the uterus. It is a reproductive conduit in all respects, connecting the external environment to the internal genitalia. (p. 11)	X		
22	A review of the literature suggests that it is biologically plausible for talc particles to migrate from the vagina to the peritoneal cavity and ovaries following perineal application.		X	
23	Talc placed on the perineum may enter the vagina and ascend to the upper genital tract.		X	
24	The potential for particulates to migrate from the perineum and vagina to the peritoneal cavity is indisputable.		X	
25	The Sjosten study offers compelling evidence in support of the migration hypothesis.		X	
26	Talc particulates from perineal application have been shown to migrate to the ovaries...		X	
27	Talc is able to migrate through the genital tract and gain access to the ovaries because talc fibers have been detected in benign and malignant ovarian tissue.		X	
28	There are inherent limitations quantifying a dose-response due to a lack of metrics for how much talc is in an "application," how much enters the vagina, and how much reaches the upper genital tract where, presumably, any deleterious effect is mediated. This may account for the failure to identify a dose-response in many papers on talc and ovarian cancer.		X	

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29	Tubal ligation is a strong protective factor. One possibility for the mechanism is blocking the transience of potential materials could impact the health of the fimbria		X	
30	Any material – whether it be talc, heavy metals, asbestos, whatever – can migrate from the perineum to the ovaries through the reproductive tract. There's an anatomical conduit. So it's not like it's blocked. Theoretically, it could happen.		X	
31	There is an anatomic conduit from the perineum through to the ovary, vagina, cervical os, endometrium, and the fallopian tube. That is, in most women, an open conduit. On a theoretic level, things can transit.	X		
32	Genital powder use was associated with ovarian cancer risk in AA women and are consistent with localized chronic inflammation in the ovary due to particulates that travel through a direct transvaginal route.		X	
33	Biologic credibility for an association would be strengthened by an animal model, but an experiment capturing all of the potential factors in the human "model" would be very difficult. These elements include chronicity of the exposure, anatomic and physiologic uniqueness of women, effects of pregnancy and potential spread through coitus.	X	X	
34	It is plausible that perineal talc (and other particulate) that reaches the endometrial cavity, Fallopian tubes, ovaries and peritoneum may elicit a foreign body type reaction and inflammatory response that, in some exposed women, may progress to epithelial cancers.		X	
35	Epidemiologic evidence implicates chronic inflammation as a central mechanism in the pathogenesis of ovarian cancer, the most lethal gynecologic cancer among women in the United States.		X	
36	Findings on talc and endometriosis are consistent with previous findings and are compatible with the hypothesis that these factors increase the risk of ovarian cancer and that inflammation may be a common pathway.		X	

No.	STATEMENT	AGREE	DISAGREE	DON'T KNOW/ NO OPINION
37	Chronic inflammation has been proposed as the possible causal mechanism that explains the observed association between certain risk factors, such as use of talcum powder (talc) in the pelvic region and epithelial ovarian cancer.	X		
38	Talc particles can induce an inflammatory response <i>in vivo</i> , which may be important in ovarian cancer risk. Normal ovarian cells treated with talc are more likely to undergo cell proliferation and neoplastic transformation, and cellular generation of reactive oxygen species increases with increasing exposure to talc.		X	
39	[A] growing body of epidemiologic evidence suggests that factors causing epithelial inflammation are involved in ovarian carcinogenesis. Such factors include asbestos and talc exposures, endometriosis and pelvic inflammatory disease (PID).		X	
40	Direct induction of inflammation as a result of endometriosis, talc and asbestos exposure, and PID, as well as ovulation itself, may act to promote ovarian tumorigenesis.		X	
41	Inflammation: Studies of the inflammatory marker C-reactive protein suggest a possible association between inflammation and an increased risk of ovarian cancer. Other specific inflammatory factors have also been associated with ovarian cancer.	X		
42	The patency of the female tract and the nature of ovarian cancer as a surface epithelial (mesothelial) lesion make the ovary a target for foreign body carcinogenesis.		X	
43	Inflammation has been suggested to be a major factor leading to epithelial ovarian cancer. For example, epidemiologic data have shown that asbestos and talc exposure increased ovarian cancer risk.		X	

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44	Studies have also found that endometriosis, pelvic inflammatory disease, and mumps viral infection are positively associated with ovarian cancer risk. In contrast, tubal ligations and hysterectomies, which are thought to reduce the exposure of the OSE to environmental inflammation initiators have been shown to reduce the risk of ovarian cancer.	X		
45	It has been noted that the ovulatory process itself resembles an inflammatory reaction, with leukocytic infiltration, the release of nitric oxide and inflammatory cytokines, vasodilatation, DNA repair, and tissue remodeling.	X		
46	The latency period of more advanced, malignant epithelial ovarian cancer could be estimated to be approximately 30-40 years.			X
47	If the magnitude of the association is to be estimated with precision, it is important that consortia are developed and expanded in order to generate the appropriate sample size.			X
48	Neither prospective study [Gertig, Houghton] confirmed the association of talc use and ovarian cancer raised by the case-control studies, but neither study was powered to detect a risk of 1.2 and therefore we cannot exclude the possibility.		X	
49	An odds ratio of 1.2 or 1.3 has no meaningful clinical impact on a patient.			X
50	There are design issues with every study, both case-controls and cohort studies.	X		
51	For baby powder users, it is habit that developed at one point and stays regularly.			X
52	In order to achieve statistical significance in a prospective study, we need a much larger cohort, e.g., we will need to study upwards of 200,000 women for ten years.		X	

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53	Given the inherent limitation of cohort studies, it is not surprising that we have not been able to confirm the case-control studies with prospective studies, but this does not mean that the case-control studies were wrong.		X	
54	It is unlikely that the association between talc and ovarian cancer is due to confounding and so it is fair to say that if there is a statistically robust relationship between talc use and ovarian cancer, it is likely to be causal (albeit with intermediate factors such as inflammation).		X	
55	Among many epidemiologic variables, no confounders for the association were identified.			X
56	There is a consistent association between talc and ovarian cancer that appears unlikely to be explained by recall or confounding.		X	
57	The meta-analyses of the available human studies in the peer-reviewed literature indicate a consistent and statistically significant positive association between perineal exposure to talc and ovarian cancer.		X	
58	In studies where the exposure is simple (e.g. never versus ever use), recall bias is unlikely to be an important source of bias.			X
59	Available data are indicative of a causal effect.		X	
60	The data supporting the association of talc to the development of ovarian cancer is completely inconclusive.	X		
61	The gold standard for translating epidemiologic case controlled or cohort observational studies into a clinical meaningful data relies on laboratory derived experiments in vitro or in vivo.		X	
62	Mineral talc occurs naturally in a platy (flat) form, but may also occur as asbestiform fibres, which describes its physical form and does not imply the presence of asbestos. The purer forms (approximately 90% mineral talc) are used for cosmetic and hygiene products including baby powders and feminine hygiene products. (Langseth 2008)			X

Exhibit 42

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IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NEW JERSEY

IN RE: JOHNSON & JOHNSON
TALCUM POWDER PRODUCTS
MARKETING, SALES PRACTICES,
AND PRODUCTS LIABILITY
LITIGATION

THIS DOCUMENT RELATES TO
ALL CASES

Case No. 16-2738
(FLW) (LHG)

MDL Docket No. 2738

Friday, March 29, 2019

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The video deposition of MICHAEL BIRRER, M.D.,
Ph.D., taken pursuant to notice, was held at
the law offices of Butler Snow, LLP, One Federal
Place, Suite 1000, 1819 Fifth Avenue North,
Birmingham, Alabama, commencing at approximately
9:03 a.m., on the above date, before Lois Anne
Robinson, Registered Diplomate Reporter,
Certified Realtime Reporter, and
Notary Public for the State of Alabama.

Michael Birrer, M.D., Ph.D.

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<p>1 VIDEOGRAPHER: 2 We are now on the record. My name is 3 Devyn Mulholland. I'm a videographer for Golkow 4 Litigation Services. Today's date is March 29th, 5 2019. The time is 9:03 a.m. 6 This video deposition is being held in 7 Birmingham, Alabama, in the matter of Talcum 8 Powder Litigation, MDL Number 2738. The deponent 9 is Michael Birrer, M.D., Ph.D. 10 Counsel will be noted on the 11 stenographic record. The court reporter is Lois 12 Robinson and will now swear in the witness. 13 MICHAEL BIRRER, M.D., PH.D., 14 the witness, after having first been 15 duly sworn to tell the truth, the whole truth, 16 and nothing but the truth, was examined and 17 testified as follows: 18 EXAMINATION 19 BY MS. THOMPSON: 20 Q Dr. Birrer, I'm Margaret Thompson, and 21 I'll be taking your deposition today. 22 You've had your deposition taken 23 before; right? 24 A Correct.</p>	<p>1 It -- it eventually went to -- to court. They 2 have a panel up there of three judges, which sort 3 of prescreens it. 4 Q And you've also submitted a previous 5 report in this case; correct? 6 MS. CURRY: 7 Object to the form. 8 A Correct. 9 MS. THOMPSON: 10 Q That was in the Swan case? Does that 11 sound familiar? 12 A Yes. 13 Q Have any of your opinions -- and that 14 was in May 2017. Does that sound right? 15 A That sounds right. 16 Q Have any of your opinions in this case 17 changed since May 2017? 18 A No. 19 Q Have any of your opinions changed since 20 you were deposed in September of 2018? 21 A No. 22 Q I guess that would be a "no" if they 23 hadn't changed since 2017. 24 A It's consistent.</p>
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<p>1 Q Including in the talcum powder 2 litigation; correct? 3 A Yes. 4 Q Have you had your deposition taken in 5 any other situation? 6 A I gave testimony in a case, but that 7 wasn't a deposition, I don't think. No. 8 Q And when was that? 9 A That was prior to the talc. It's -- 10 probably goes back, I want to say, 2015, 2012, 11 somewhere -- 12 Q And what -- sorry. 13 A Yeah. 14 Q What was the nature of that matter? 15 A I was in Massachusetts at the time. It 16 was a delayed diagnosis case. 17 Q A medical malpractice case? 18 A Medical malpractice, yes. 19 Q Were you testifying for the plaintiff 20 or for the defendant? 21 A Defendant. 22 Q Was it a physician or a doc- -- a 23 hospital? 24 A It was both. And it was in Maine.</p>	<p>1 Q And you're aware that the purpose of 2 today is for me to gain a thorough understanding 3 of what opinions you plan to give at a hearing or 4 trial? 5 A Yes. 6 Q And the basis for those opinions; 7 right? 8 A Yes. 9 Q And your report states that your 10 opinions are given to a reasonable degree of 11 scientific and medical certainty. 12 What does that mean to you? 13 A It means that, basically, more often 14 than not, they're correct. 15 Q And you are a medical doctor as well as 16 a Ph.D. researcher; correct? 17 A Correct. 18 Q Do you currently see patients? 19 A I do. 20 Q Do you currently diagnose ovarian 21 cancer in women? 22 A Yes. 23 Q How -- do you treat women with ovarian 24 cancer?</p>

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<p>1 A Yes.</p> <p>2 Q And would that primarily involve the</p> <p>3 medical aspects, including chemotherapy</p> <p>4 administration?</p> <p>5 A Yes.</p> <p>6 Q Do you perform any surgical procedures?</p> <p>7 A No.</p> <p>8 Q What --</p> <p>9 A I'm a medical oncologist.</p> <p>10 Q What --</p> <p>11 A I could perform it, but it wouldn't</p> <p>12 come out very well.</p> <p>13 Q I understand.</p> <p>14 What percentage of your time involves</p> <p>15 patient care versus research?</p> <p>16 A So --</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A -- right now I have a half-a-day clinic</p> <p>20 a week, and then the research component, I have a</p> <p>21 fully funded lab, probably two days a week. I'm</p> <p>22 the director of the cancer center, which also</p> <p>23 takes a fair amount of administrative</p> <p>24 responsibility.</p>	<p>1 A Yes.</p> <p>2 Q And does that pretty much cover the</p> <p>3 types of research that you would be doing in your</p> <p>4 lab --</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 MS. THOMPSON:</p> <p>8 Q -- or in a general sense?</p> <p>9 A I'm just trying to think if there was</p> <p>10 anything else. We obviously do a lot of</p> <p>11 review-type papers and articles. You know, I</p> <p>12 think that's pretty broad. I think it does,</p> <p>13 actually.</p> <p>14 Q When you do a review article, is that</p> <p>15 usually invited by the journal, or is that a</p> <p>16 topic that you have interest in that you submit</p> <p>17 as a publication?</p> <p>18 A Could be both. A lot of them are</p> <p>19 invited. But we have occasionally thought of</p> <p>20 areas that we thought were interesting and</p> <p>21 important and suggested it.</p> <p>22 Q And are authors or review articles</p> <p>23 generally intended to be experts in the field?</p> <p>24 MS. CURRY:</p>
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<p>1 MS. THOMPSON:</p> <p>2 Q So administrative time --</p> <p>3 A Yeah.</p> <p>4 Q -- as well included in that?</p> <p>5 And how would you describe the focus of</p> <p>6 your laboratory search -- research currently?</p> <p>7 A Almost entirely on ovarian cancer and</p> <p>8 exploring detailing the genomics, the molecular</p> <p>9 basis for ovarian cancer and trying to translate</p> <p>10 that into better early detection, diagnosis and</p> <p>11 treatment.</p> <p>12 Q Are you doing in vitro as well as in</p> <p>13 vivo research?</p> <p>14 A Correct.</p> <p>15 Q And have published in both animal</p> <p>16 studies as well as cellular studies?</p> <p>17 A Yes.</p> <p>18 Q Have you published with immortalized</p> <p>19 cells?</p> <p>20 A Yes.</p> <p>21 Q Have you published research with human</p> <p>22 tissue?</p> <p>23 A Yes.</p> <p>24 Q Have you published human trials?</p>	<p>1 Object to the form.</p> <p>2 A More often than not, yes. But</p> <p>3 frequently on my reviews, I'll have some junior</p> <p>4 people.</p> <p>5 MS. THOMPSON:</p> <p>6 Q With -- with a senior author</p> <p>7 usually --</p> <p>8 A (Nods affirmatively.)</p> <p>9 Q -- correct?</p> <p>10 A Correct.</p> <p>11 Q And that would be, I would think,</p> <p>12 because readers of a journal want to know that</p> <p>13 it's an expert in the field that's providing the</p> <p>14 information in a review article; right?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A I think so, yeah.</p> <p>18 MS. THOMPSON:</p> <p>19 Q Would you agree with me that it would</p> <p>20 be unethical at this point in time to design a</p> <p>21 prospective study in which women were exposed to</p> <p>22 talcum powder in the genital area and follow over</p> <p>23 time?</p> <p>24 MS. CURRY:</p>

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<p>1 Object to the form.</p> <p>2 A Prospectively and randomized and --</p> <p>3 could you just --</p> <p>4 MS. THOMPSON:</p> <p>5 Q Let's start with just prospectively.</p> <p>6 A I -- I think it would be a --</p> <p>7 interesting question. I don't think it would be</p> <p>8 valuable.</p> <p>9 Q How about a randomized trial? Would it</p> <p>10 be ethical?</p> <p>11 A No. I don't think it would be valuable</p> <p>12 at all.</p> <p>13 Q But I didn't ask about valuable.</p> <p>14 What about ethical?</p> <p>15 A Well, val- -- if it's not valuable, it</p> <p>16 should -- it wouldn't be of great concern to do</p> <p>17 that. I'm not sure what you're asking.</p> <p>18 Q Well, I'm asking if you -- if you have</p> <p>19 a carcinogen, even a possible carcinogen, you</p> <p>20 could not design and get a trial through IRB</p> <p>21 using that product and a control group; correct?</p> <p>22 MR. MIZGALA:</p> <p>23 Object to form.</p> <p>24 A I guess -- I -- I see what -- now I see</p>	<p>1 A And this is -- this is a -- let me get</p> <p>2 my glasses -- supplemental materials received by</p> <p>3 me after this was done.</p> <p>4 Q Okay.</p> <p>5 A Okay?</p> <p>6 Q And, so, "received by" you meant the</p> <p>7 lawyers for Johnson & Johnson provided those</p> <p>8 supplemental materials to you?</p> <p>9 A It was a little bit of both. I mean,</p> <p>10 some of this I wasn't privy to, so I got it</p> <p>11 provided to me, and some of these were additional</p> <p>12 articles that I was -- I pulled out.</p> <p>13 Q Okay. And I've marked as Exhibit 1</p> <p>14 your expert report.</p> <p>15 (DEPOSITION EXHIBIT NUMBER 1</p> <p>16 WAS MARKED FOR IDENTIFICATION.)</p> <p>17 MS. THOMPSON:</p> <p>18 Q Do you --</p> <p>19 Do you have a copy? You're good on</p> <p>20 that?</p> <p>21 A And mine's -- mine's thicker than</p> <p>22 yours, so -- it's got my CV in there.</p> <p>23 Q I separated out your CV. So -- well,</p> <p>24 good. But that's a good observation.</p>
Page 19	Page 21
<p>1 what you're asking.</p> <p>2 So my position on that is that talc</p> <p>3 is -- I don't believe talc is a carcinogen.</p> <p>4 MS. THOMPSON:</p> <p>5 Q I understand. But there are others</p> <p>6 that do.</p> <p>7 And, so, is it your opinion that an IRB</p> <p>8 would let a study through using what has been</p> <p>9 designated as a possible carcinogen, say, for</p> <p>10 example, IARC?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A I have no idea.</p> <p>14 MS. THOMPSON:</p> <p>15 Q All right. So the ground rules are</p> <p>16 we'll try not to interrupt each other. Let me</p> <p>17 know if I ask a bad question or one that you</p> <p>18 don't understand, and I'll expect you to answer</p> <p>19 honestly. Fair enough?</p> <p>20 A Yes.</p> <p>21 Q If you need a break, let me know.</p> <p>22 What did you bring with you today?</p> <p>23 A I have my expert report right here.</p> <p>24 Q And is that all you brought with you?</p>	<p>1 And -- and I marked as Exhibit 2 your</p> <p>2 CV.</p> <p>3 A Okay.</p> <p>4 (DEPOSITION EXHIBIT NUMBER 2</p> <p>5 WAS MARKED FOR IDENTIFICATION.)</p> <p>6 MS. THOMPSON:</p> <p>7 Q And that should --</p> <p>8 And you're good on that, too?</p> <p>9 MS. CURRY:</p> <p>10 Thank you.</p> <p>11 MS. THOMPSON:</p> <p>12 Q That should -- those combined should be</p> <p>13 the same thickness of what you've brought.</p> <p>14 And I also brought the Notice of</p> <p>15 Deposition, which I'm going to hand you.</p> <p>16 (DEPOSITION EXHIBIT NUMBER 3</p> <p>17 WAS MARKED FOR IDENTIFICATION.)</p> <p>18 MS. THOMPSON:</p> <p>19 Q And this is the one with objections.</p> <p>20 Have you seen this before, Dr. Birrer?</p> <p>21 A Yes.</p> <p>22 Q And did you look at the request on</p> <p>23 the -- on this document?</p> <p>24 A Yes.</p>

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<p>1 Q Is there -- and there's nothing that</p> <p>2 was responsive to any of these requests?</p> <p>3 MS. CURRY:</p> <p>4 Objection. Subject to the objections</p> <p>5 that were made by counsel.</p> <p>6 MS. THOMPSON:</p> <p>7 Q Subject --</p> <p>8 MS. THOMPSON:</p> <p>9 Sorry.</p> <p>10 Q Subject to the objections.</p> <p>11 A Yeah.</p> <p>12 Q So where would you keep your file for</p> <p>13 the litigation?</p> <p>14 MS. CURRY:</p> <p>15 And I'm sorry. Just to clarify for the</p> <p>16 record, there is a small production at the back</p> <p>17 that incorporates the --</p> <p>18 MS. THOMPSON:</p> <p>19 Yes.</p> <p>20 MS. CURRY:</p> <p>21 -- invoice as well as the supplemental</p> <p>22 fee schedule and the supplemental list of</p> <p>23 materials.</p> <p>24 MS. THOMPSON:</p>	<p>1 Q -- this litigation?</p> <p>2 And be careful not to interrupt just</p> <p>3 because it makes our court reporter's job a</p> <p>4 little more difficult.</p> <p>5 How much money have you been paid total</p> <p>6 by Johnson & Johnson in talcum powder litigation?</p> <p>7 A To date, nothing.</p> <p>8 Q You haven't been paid for any of the</p> <p>9 other cases that you've testified in?</p> <p>10 A Correct.</p> <p>11 Q Why is that?</p> <p>12 A I'm a lousy businessman. I haven't</p> <p>13 invoiced for Swan yet and I haven't invoiced for</p> <p>14 Brower. But I can -- I can estimate the hours.</p> <p>15 Q Go ahead and estimate.</p> <p>16 A Swan I think is around 80 hours --</p> <p>17 Q Okay.</p> <p>18 A -- because it was the initial case. It</p> <p>19 was a bundled -- bundled five cases, so involved</p> <p>20 a lot of review. And the deposition alone was</p> <p>21 quite long. I remember like it was yesterday.</p> <p>22 And, then, Brower was probably about 40</p> <p>23 hours.</p> <p>24 Q Okay.</p>
Page 23	Page 25
<p>1 Right.</p> <p>2 Q So the supplemental material list that</p> <p>3 you brought with you today, Dr. Birrer, is</p> <p>4 attached to the back of this notice with</p> <p>5 objections; correct?</p> <p>6 A That's the same as this. Yes.</p> <p>7 Q Yes.</p> <p>8 A Yeah. Uh-huh.</p> <p>9 Q And also attached to this -- this</p> <p>10 notice with objections are your fees; correct?</p> <p>11 A Correct.</p> <p>12 Q And are -- are those all the invoices</p> <p>13 that you have submitted thus far?</p> <p>14 A Yes.</p> <p>15 Q And how much -- and from -- this</p> <p>16 invoice that's attached to Exhibit 3 goes through</p> <p>17 March 17th.</p> <p>18 How much time would you say you have</p> <p>19 spent since March 17th preparing for the case?</p> <p>20 A I'd say probably put another 15 hours,</p> <p>21 And I haven't invoiced that yet.</p> <p>22 Q Okay. And you have testified in other</p> <p>23 cases for the defendants in --</p> <p>24 A Correct.</p>	<p>1 A And those invoices are being</p> <p>2 constructed.</p> <p>3 Q And you're charging those at the same</p> <p>4 rate as in your fee schedule --</p> <p>5 A That's right.</p> <p>6 Q -- attached to this document?</p> <p>7 A That's right.</p> <p>8 Q Okay. When were you first approached</p> <p>9 by Johnson & Johnson as -- about serving as an</p> <p>10 expert in talcum powder litigation?</p> <p>11 A So that was before the -- that was the</p> <p>12 Blaes or Swan case. I believe it was in</p> <p>13 December, around November, December of 2016.</p> <p>14 Q '16?</p> <p>15 A Thank you. Time flies.</p> <p>16 Q Only because I know that the report was</p> <p>17 submitted in May, so --</p> <p>18 A (Nods affirmatively.)</p> <p>19 Q -- I'm assuming that you didn't work 18</p> <p>20 months on that --</p> <p>21 A No.</p> <p>22 Q -- case.</p> <p>23 And you were asked in -- for this</p> <p>24 report that you just submitted, to address the</p>

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<p>1 biological plausibility of the plaintiffs' theory</p> <p>2 that cosmetic talcum powder can cause ovarian</p> <p>3 cancer. Right?</p> <p>4 A Correct.</p> <p>5 Q And that would be the stand- -- from</p> <p>6 the standpoint of the genomics and molecular</p> <p>7 biology that is your expertise; correct?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A So I think they were asking me in the</p> <p>11 big picture the biologic plausibility of talc</p> <p>12 being involved in the -- causing ovarian cancer</p> <p>13 and then my scientific experience, even clinical</p> <p>14 experience, would factor into -- to -- to that</p> <p>15 expert opinion.</p> <p>16 MS. THOMPSON:</p> <p>17 Q Was that a different opinion than what</p> <p>18 you were asked to provide in the previous cases</p> <p>19 that you testified in?</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A Previously -- the answer, I believe, is</p> <p>23 no. But I was asked for general causation</p> <p>24 before. This was a more -- somewhat more narrow</p>	<p>1 with an increased risk of epithelial ovarian</p> <p>2 cancer?</p> <p>3 A Correct.</p> <p>4 Q Is it your opinion that the genital use</p> <p>5 of talcum powder is not a risk factor for</p> <p>6 epithelial ovarian cancer?</p> <p>7 A Correct.</p> <p>8 Q Is it your opinion that genital use of</p> <p>9 talcum powder products does not cause ovarian</p> <p>10 cancer?</p> <p>11 A Correct.</p> <p>12 Q Is it your opinion that the genital use</p> <p>13 of talcum powder products does not cause ovarian</p> <p>14 cancer in some women?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A Correct.</p> <p>18 MS. THOMPSON:</p> <p>19 Q And that would be ever.</p> <p>20 MS. CURRY:</p> <p>21 Object -- object to the form.</p> <p>22 A No data to support that.</p> <p>23 MS. THOMPSON:</p> <p>24 Q Is it your opinion that the genital use</p>
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<p>1 expert opinion.</p> <p>2 MS. THOMPSON:</p> <p>3 Q So in this case, you're not providing</p> <p>4 general causation opinions. You're providing the</p> <p>5 biological mechanism, plausibility opinions;</p> <p>6 correct?</p> <p>7 A Well, the title --</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A The title on the expert report is for</p> <p>11 General Causation For the Daubert Hearing. But</p> <p>12 my understanding was -- was to focus extensively,</p> <p>13 if you will, on the biologic plausibility.</p> <p>14 MS. THOMPSON:</p> <p>15 Q And because biological plausibility is</p> <p>16 part of general causation; correct?</p> <p>17 A Correct.</p> <p>18 Q But it's not the whole of general</p> <p>19 causation. Is that your understanding?</p> <p>20 A Correct.</p> <p>21 Q So I want to make sure that I</p> <p>22 understand your opinions.</p> <p>23 Is it your opinion that the perineal</p> <p>24 use of talcum powder products is not associated</p>	<p>1 of talcum powder does not contribute to the</p> <p>2 development of epithelial ovarian cancer?</p> <p>3 A Yes.</p> <p>4 Q And do you say that there's no data to</p> <p>5 support that as well?</p> <p>6 A Correct.</p> <p>7 Q Is it your opinion that genital use of</p> <p>8 talcum powder does not contribute to the</p> <p>9 development of ovarian cancer in some women?</p> <p>10 MS. CURRY:</p> <p>11 Object to the form.</p> <p>12 A There's no data to support that either.</p> <p>13 MS. THOMPSON:</p> <p>14 Q So the answer is yes?</p> <p>15 A Yes.</p> <p>16 Q Is it your opinion that any proposed</p> <p>17 biologic mechanism for how the genital use of</p> <p>18 talcum powder products could cause epithelial</p> <p>19 ovarian cancer is not plausible?</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A I would agree with that statement.</p> <p>23 It's not biologically plausible.</p> <p>24 MS. THOMPSON:</p>

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<p style="text-align: right;">Page 30</p> <p>1 Q Is it your opinion that any proposed</p> <p>2 biologic mechanism for how the genital use of</p> <p>3 talcum powder products might contribute to the</p> <p>4 development of ovarian cancer is not plausible?</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 A There's no data for that either.</p> <p>8 MS. THOMPSON:</p> <p>9 Q So the answer would be yes?</p> <p>10 A Yes.</p> <p>11 Q Do you intend to give opinions on</p> <p>12 whether talc particles can reach the ovaries?</p> <p>13 A I believe on my expert report and in --</p> <p>14 and I'm more than happy to talk about it --</p> <p>15 reviews the migration theories.</p> <p>16 Q Do you consider yourself to be an</p> <p>17 expert in that area?</p> <p>18 A I think that those studies are</p> <p>19 relatively straightforward and, based upon my</p> <p>20 experience that, I would be relatively easy to</p> <p>21 interpret those.</p> <p>22 Q Do you feel like you would be in a</p> <p>23 better position than a gynecologist or</p> <p>24 gynecologic oncologist?</p>	<p style="text-align: right;">Page 32</p> <p>1 Object to the form.</p> <p>2 A Correct.</p> <p>3 MS. THOMPSON:</p> <p>4 Q Are all the opinions contained in your</p> <p>5 report that you will be providing in this case?</p> <p>6 A That's a tough question to ask because</p> <p>7 I don't know what you're gonna ask me.</p> <p>8 Q Fair enough.</p> <p>9 Can you think of any areas, sitting</p> <p>10 here today, that you intend to testify in other</p> <p>11 than the migration and transport of particles and</p> <p>12 the molecular and genomics of cellular tissue</p> <p>13 response to talc?</p> <p>14 MS. CURRY:</p> <p>15 Object to the form.</p> <p>16 A Well, that's the bulk of my expert</p> <p>17 report. I'm -- again, it depends on what you ask</p> <p>18 me within the construct of general causation.</p> <p>19 I'm willing to talk about some of that.</p> <p>20 MS. THOMPSON:</p> <p>21 Q Okay. I understand.</p> <p>22 A Uh-huh.</p> <p>23 Q And you are not an epidemiologist;</p> <p>24 correct?</p>
<p style="text-align: right;">Page 31</p> <p>1 A Yes.</p> <p>2 Q Have you found any new expertise in the</p> <p>3 migration or transport of particles in the female</p> <p>4 reproductive system since 2017?</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 A I'm not sure what you mean by "found</p> <p>8 any new expertise." In the literature or my own</p> <p>9 experience?</p> <p>10 MS. THOMPSON:</p> <p>11 Q Do you believe that you have more</p> <p>12 expertise in that subject than you did in 2017?</p> <p>13 A I think that it's comparable.</p> <p>14 Q So that would be no additional</p> <p>15 expertise since 2017, when you testified</p> <p>16 previously?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A Not that I can identify as -- as we're</p> <p>20 discussing this.</p> <p>21 MS. THOMPSON:</p> <p>22 Q And same for 2018, when you gave a</p> <p>23 deposition in -- in a talcum powder case?</p> <p>24 MS. CURRY:</p>	<p style="text-align: right;">Page 33</p> <p>1 A I don't have a degree in epidemiology.</p> <p>2 But I have training.</p> <p>3 Q So would you agree that your</p> <p>4 understanding of epidemiology is general in</p> <p>5 nature?</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 A So in order to be a, you know,</p> <p>9 laboratory-based scientist in this field and a</p> <p>10 clinician to treat patients, you certainly need</p> <p>11 to have an understanding of epidemiologic</p> <p>12 studies, so I have that understanding. And I</p> <p>13 think that it gives me the ability to assess</p> <p>14 epidemiologic studies and to draw conclusions</p> <p>15 from them.</p> <p>16 MS. THOMPSON:</p> <p>17 Q But if you're looking for more nuanced</p> <p>18 or more comprehensive epidemiological experience,</p> <p>19 you would look to an actual epidemiologist;</p> <p>20 correct?</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A Well, I think it would depend on the</p> <p>24 question that's being asked.</p>

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<p>1 MS. THOMPSON: 2 Q Well, for example, in the consortium 3 that you publish with, there are specific 4 epidemiologists that publish with the group; 5 correct? 6 A Which consortium are you referring to? 7 Q There are several? 8 A Yes. 9 Q Take -- take the Ovarian Cancer 10 Association Consortium. 11 A The GOS? 12 Q No. OCAC or -- 13 A Okay. 14 Q There are specific epidemiologists that 15 I assume are recruited to -- to provide the 16 epidemiology experience in that consortium; 17 correct? 18 A There are epidemiologists in that 19 consortium. I will point out there are lots of 20 other people and scientists. 21 Q And -- and -- and you would be sought 22 out for that type of consortium because of your 23 molecular experience; correct? 24 MS. CURRY:</p>	<p>1 comments, and they're all listed in terms of 2 biologic plausibility. And then, of course, I 3 spent a lot of time on Dr. Saed. 4 MS. THOMPSON: 5 Q My question, though, is which of the 6 plaintiff experts were you asked to offer 7 criticism of? 8 MS. CURRY: 9 Object to the form. 10 A So I reviewed the entire list, and 11 that's listed in the materials. I think it's on 12 page -- 13 MS. THOMPSON: 14 Q 28? 15 A -- 28 and 29. 16 Q Okay. Let's go ahead and go -- do -- 17 did you read all of these experts -- expert 18 reports? 19 A I looked through them, yes. 20 Q And each one? 21 A Correct. 22 Q All right. Let's go through each one 23 and have you tell me what you gleaned from each 24 expert report.</p>
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<p>1 Object to the form. 2 A Well, I would add to that that I think 3 from a -- sort of a clinical standpoint we 4 provide some reality testing in terms of 5 whether -- what they're observing is actually 6 meaningful. 7 MS. THOMPSON: 8 Q Yes. So it would be for your 9 experience as a clinician in genomics and 10 molecular researcher; right? 11 A Yes. 12 Q That makes sense. 13 You're not a gynecologist or 14 gynecologic oncologist; correct? 15 A Correct. 16 Q Were you asked to offer criticism of 17 plaintiff experts and their opinions? 18 MS. CURRY: 19 Object to the form. 20 A So in my expert report, I really 21 reviewed the primary literature, and with -- with 22 then integrating that into the arguments made by 23 plaintiffs' expert witnesses. So you see in a 24 section there I began to look at individuals'</p>	<p>1 MS. CURRY: 2 Object to the form. 3 MS. THOMPSON: 4 Q Ann McTiernan, do you know Ann 5 McTiernan? 6 A I don't know her personally. 7 Q What's her field of expertise? 8 A I would have to check that. 9 Q So you don't remember here today 10 what -- 11 A Well, you're reviewing, I think -- 12 let's be honest, 300 pages. I'm not going to be 13 able to go through those systematically. 14 Q Well -- 15 A But if you look at my report, it very 16 specifically addressed some of the flaws in the 17 experts' opinions regarding migration of talc. 18 Q I -- I understand. But my question is 19 do you know what Dr. McTiernan's area of 20 expertise is? And it's fine if you don't. 21 A I'd have to look it up. 22 Q Okay. Do you know Dr. Carson's area of 23 expertise? 24 A I have never met him, and I don't know</p>

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<p>1 him.</p> <p>2 Q Have you met Dr. McTiernan?</p> <p>3 A No.</p> <p>4 Q What is Dr. Clarke-Pearson's area of</p> <p>5 expertise?</p> <p>6 A Clarke-Pearson is a gynecological</p> <p>7 oncologist, former department chair at UNC. Now</p> <p>8 he's stepped down.</p> <p>9 Q And do you know Dr. Clarke-Pearson?</p> <p>10 A I've met him.</p> <p>11 Q And what about Dr. Kessler?</p> <p>12 A I've never met Dr. Kessler.</p> <p>13 Q What's his area of expertise?</p> <p>14 A I can't quote you that.</p> <p>15 Q What's Dr. Smith's area of expertise?</p> <p>16 A I think Dr. Smith's pretty -- actually,</p> <p>17 I can't tell you.</p> <p>18 Q And Dr. Saed, I think we know.</p> <p>19 What about Dr. Siemiatycki?</p> <p>20 A Uh-uh. No.</p> <p>21 Q Dr. Wolf?</p> <p>22 A I've met Judith. She's a gynecologic</p> <p>23 oncologist.</p> <p>24 Q And do you know Dr. Zelikoff's area of</p>	<p>1 experiments?</p> <p>2 A No. Laboratory-based?</p> <p>3 Q Laboratory, yes.</p> <p>4 A No.</p> <p>5 Q What did you know about talcum powder</p> <p>6 and a possible link to ovarian cancer before you</p> <p>7 were approached to serve as an expert in 2017?</p> <p>8 A So it was not something that we dealt</p> <p>9 with clinically. We never counseled patients.</p> <p>10 Scientifically, it never really was part of my</p> <p>11 laboratory effort. I didn't know really -- I</p> <p>12 didn't know anybody working with it in the lab.</p> <p>13 And -- and, you know, to be fair, I would say</p> <p>14 that I was aware of the sort of concept that some</p> <p>15 people -- some epidemiologic studies were being</p> <p>16 done trying to determine relationship of talc</p> <p>17 exposure to ovarian cancer. And that's about it.</p> <p>18 Q Were you -- were you aware of the</p> <p>19 issues raised by Dr. Woodruff and others in the</p> <p>20 '70s about possible contamination with asbestos?</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A No.</p> <p>24 MS. THOMPSON:</p>
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<p>1 expertise?</p> <p>2 A I don't know her.</p> <p>3 Q Nor her area of expertise?</p> <p>4 A Correct.</p> <p>5 Q What about Dr. Plunkett? Do you know</p> <p>6 her area of expertise?</p> <p>7 A I don't.</p> <p>8 Q Dr. Moorman, do you know her area of</p> <p>9 expertise?</p> <p>10 A Don't know her. No.</p> <p>11 Q Dr. Smith-Bindman, do you know her area</p> <p>12 of expertise?</p> <p>13 A No.</p> <p>14 Q Do you know the area of expertise of</p> <p>15 Dr. Kane?</p> <p>16 A Nope.</p> <p>17 Q Dr. Levy?</p> <p>18 A No.</p> <p>19 Q Dr. Singh?</p> <p>20 A No.</p> <p>21 Q Were you asked by Johnson & Johnson to</p> <p>22 perform any experiments?</p> <p>23 A No.</p> <p>24 Q Did you offer to perform any</p>	<p>1 Q Did you have any opinions about whether</p> <p>2 talcum powder could cause ovarian cancer before</p> <p>3 you were approached to serve as an expert?</p> <p>4 A Well, my sense was that it wasn't a</p> <p>5 factor.</p> <p>6 Q And what was --</p> <p>7 A Because we -- again, we weren't -- we</p> <p>8 weren't using it in the clinic. We weren't</p> <p>9 talking about it. There were essentially no</p> <p>10 presentations in the biologic plausibility within</p> <p>11 any of the scientific meetings that I would go</p> <p>12 to.</p> <p>13 Q And at that time, that's what your</p> <p>14 impression, at least, would have been based on?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A Yeah.</p> <p>18 MS. THOMPSON:</p> <p>19 Q Did you write your report?</p> <p>20 A Yes.</p> <p>21 Q Every word?</p> <p>22 A Yes.</p> <p>23 Q Did you choose the literature to cite?</p> <p>24 A So I pulled out most of that myself,</p>

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<p>1 went back and did a reference list and then</p> <p>2 pulled more. As I said before, the expert</p> <p>3 reports would have been provided from counsel.</p> <p>4 There may have been some papers that I</p> <p>5 said, hey, I don't have this. Can you pull this</p> <p>6 out? And then they would -- they would provide</p> <p>7 it to me.</p> <p>8 Q And there are -- just so I understand</p> <p>9 the literature --</p> <p>10 A Uh-huh.</p> <p>11 Q -- there's literature that you actually</p> <p>12 cite in the report in footnotes; right?</p> <p>13 A Correct.</p> <p>14 Q And then there's another list at the</p> <p>15 end of the report that's considered -- that's</p> <p>16 titled "Materials Reviewed and Considered by Dr.</p> <p>17 Birrer"; right?</p> <p>18 A That's right.</p> <p>19 Q And can I assume that the literature</p> <p>20 that are actually cited in the footnotes is</p> <p>21 literature that you felt was particularly</p> <p>22 significant?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>	<p>1 of information, I did that by searching.</p> <p>2 MS. THOMPSON:</p> <p>3 Q And what search engines did you use?</p> <p>4 A It was mostly PubMed, which is</p> <p>5 something we use all the time.</p> <p>6 Q And did you -- what search terms did</p> <p>7 you use?</p> <p>8 A Ovary, ovarian cancer, talc. So the</p> <p>9 ones you -- you'd predict. And that doesn't</p> <p>10 necessarily generate the entire list. Right? I</p> <p>11 mean, you get the list and then you look at the</p> <p>12 papers, go back to the references in those</p> <p>13 papers, and then you see if you -- you're missing</p> <p>14 out. Then you pull out more. And as you go</p> <p>15 through this iteration, you begin to find out</p> <p>16 that you're identifying the same patient -- the</p> <p>17 same papers. So then you begin to get an idea</p> <p>18 that you have the sum total of what you need.</p> <p>19 Q And have you saved those papers</p> <p>20 anywhere?</p> <p>21 A So those were -- the way that worked</p> <p>22 was they came in, mostly computer-based, and then</p> <p>23 I would look at those, extract what I wanted, and</p> <p>24 then construct the report. And that was all done</p>
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<p>1 A Yeah. So the idea here was to try to</p> <p>2 provide some guidance as to where that reference</p> <p>3 was relevant within the document. That's why</p> <p>4 it's on each page. At the end is a sort of sum</p> <p>5 total.</p> <p>6 MS. THOMPSON:</p> <p>7 Q Okay.</p> <p>8 A Yeah.</p> <p>9 Q Did you choose any quotes that are</p> <p>10 included in your expert report yourself?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 MS. THOMPSON:</p> <p>14 Q It was a bad question.</p> <p>15 Did you choose the quotes that are</p> <p>16 included in your expert report?</p> <p>17 A Correct.</p> <p>18 Q Did you choose the language that you</p> <p>19 used to criticize the plaintiffs' experts?</p> <p>20 A Correct.</p> <p>21 Q Did you perform any searches?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A In order to generate the original body</p>	<p>1 in the computer.</p> <p>2 Q But what happened to the articles?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A Well, they'd be computer-based, or</p> <p>6 there's backup, I believe, some backup copies</p> <p>7 here on everything.</p> <p>8 MS. THOMPSON:</p> <p>9 Q So -- so everything that you looked at</p> <p>10 would be in your materials considered list and</p> <p>11 the supplemental materials considered list?</p> <p>12 A Correct. Yep.</p> <p>13 Q Did you look at plaintiff expert</p> <p>14 depositions?</p> <p>15 A Correct.</p> <p>16 Q Which ones?</p> <p>17 A So I looked at the deposition of</p> <p>18 Dr. Saenz. I think that's listed on supplemental</p> <p>19 deposition.</p> <p>20 MS. CURRY:</p> <p>21 I believe she asked about plaintiff</p> <p>22 expert deposition.</p> <p>23 MS. THOMPSON:</p> <p>24 Q Plaintiff.</p>

12 (Pages 42 to 45)

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<p>1 A I'm sorry. I'm on the wrong one. So</p> <p>2 that would be Dr. Saed.</p> <p>3 Q Uh-huh.</p> <p>4 A And I think -- let's go back and look.</p> <p>5 I think -- yeah. It was 23 and 24 are -- were</p> <p>6 both the Saed depositions. I think that's it.</p> <p>7 Q In the file -- the backup file that you</p> <p>8 mentioned that's here, is that on a thumb drive</p> <p>9 or what's --</p> <p>10 MS. CURRY:</p> <p>11 Object to the form. They're actually</p> <p>12 my -- the lawyer's files. I just brought a copy</p> <p>13 of the references in case we needed to refer to</p> <p>14 everything. But it's not -- actually not</p> <p>15 Dr. Birrer's file.</p> <p>16 MS. THOMPSON:</p> <p>17 Q So there's no electronic file that you</p> <p>18 possess?</p> <p>19 A Yeah.</p> <p>20 Q Did you make any notes or highlights on</p> <p>21 any of the articles that --</p> <p>22 A (Shakes head negatively.)</p> <p>23 Q And in addition to Dr. Saed's</p> <p>24 deposition, you have listed two drafts of his</p>	<p>1 MS. CURRY:</p> <p>2 Here you go.</p> <p>3 A This supplemental list with objections</p> <p>4 or the extra paper?</p> <p>5 MS. THOMPSON:</p> <p>6 Q And you reviewed some reports from</p> <p>7 governmental and regulatory agencies; correct?</p> <p>8 A Correct.</p> <p>9 Q I'll go ahead and mark those. We're</p> <p>10 gonna discuss them more later.</p> <p>11 (DEPOSITION EXHIBIT NUMBER 4</p> <p>12 WAS MARKED FOR IDENTIFICATION.)</p> <p>13 MS. THOMPSON:</p> <p>14 Q You've looked at the Health Canada's</p> <p>15 recent draft assessment; correct?</p> <p>16 A Yes.</p> <p>17 Q When did you first see that?</p> <p>18 A It was in a deposition of Dr. Saenz's.</p> <p>19 Q And do you know when that was first</p> <p>20 published?</p> <p>21 A The Health Canada?</p> <p>22 Q Yes.</p> <p>23 A Fairly recently. Can't quote you the</p> <p>24 date.</p>
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<p>1 manuscript that was recently published; correct?</p> <p>2 A I believe I saw the pre-print and then</p> <p>3 the copy of the actual published paper. And, of</p> <p>4 course, his expert report.</p> <p>5 Q When did you first see Dr. Saed's</p> <p>6 manuscript?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A Preprint or published?</p> <p>10 MS. THOMPSON:</p> <p>11 Q Either.</p> <p>12 A So I think the preprint came first,</p> <p>13 obviously. The expert report was available</p> <p>14 first, and then the preprint, and then just</p> <p>15 within, I think, a month and a half I got the</p> <p>16 paper. It was pretty recent.</p> <p>17 Q Is Dr. Saenz's published manuscript on</p> <p>18 your supplemental materials list?</p> <p>19 MS. CURRY:</p> <p>20 It's attached to the objections, which</p> <p>21 is Exhibit 3.</p> <p>22 MS. THOMPSON:</p> <p>23 Yeah. I -- I couldn't find my notice</p> <p>24 with objections.</p>	<p>1 Q If it was December, would that surprise</p> <p>2 you?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A December of --</p> <p>6 MS. THOMPSON:</p> <p>7 Q Of '18?</p> <p>8 A That's pretty recent.</p> <p>9 Q Were you not aware that this had been</p> <p>10 put online by Health Canada prior to Dr. Saenz's</p> <p>11 deposition?</p> <p>12 A I was not.</p> <p>13 Q Did you review that 2014 letter from</p> <p>14 FDA in response to a public citizen complaint?</p> <p>15 A I am familiar with that.</p> <p>16 (DEPOSITION EXHIBIT NUMBER 5</p> <p>17 WAS MARKED FOR IDENTIFICATION.)</p> <p>18 MS. THOMPSON:</p> <p>19 Q And I'll mark that 2014 public citizen</p> <p>20 response letter from the FDA as Exhibit Number 5.</p> <p>21 Does that look like the letter that you</p> <p>22 reviewed, Dr. Birrer?</p> <p>23 A (Nods affirmatively.) I've seen that,</p> <p>24 yeah.</p>

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<p>1 Q And did you review the IARC Monograph</p> <p>2 on Nonasbestiform Talc from 2010?</p> <p>3 A I did.</p> <p>4 Q And that will be Exhibit Number 6.</p> <p>5 (DEPOSITION EXHIBIT NUMBER 6</p> <p>6 WAS MARKED IDENTIFICATION.)</p> <p>7 MS. THOMPSON:</p> <p>8 Q Does that look like the document that</p> <p>9 you reviewed?</p> <p>10 A Yes. Yeah. I've seen that. Yep.</p> <p>11 MS. THOMPSON:</p> <p>12 Dawn, if you want more copies, I'm</p> <p>13 happy to give --</p> <p>14 MS. CURRY:</p> <p>15 I'm okay. I don't know if other</p> <p>16 counsel need a copy to review.</p> <p>17 MR. MIZGALA:</p> <p>18 No.</p> <p>19 MS. THOMPSON:</p> <p>20 I think for most everything I have</p> <p>21 another copy, so if there's anything you'd like</p> <p>22 to see and not have to take home with you, I'm</p> <p>23 happy to provide it.</p> <p>24 MS. THOMPSON:</p>	<p>1 Q Okay. That's my question.</p> <p>2 A Yes.</p> <p>3 Q But it was published in December, and</p> <p>4 you didn't look at it until you saw it in</p> <p>5 Dr. Saenz's deposition as an exhibit; right?</p> <p>6 A Correct.</p> <p>7 Q Did you deem it important?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A Well, since it was quoted and my</p> <p>11 impression was that there were people who thought</p> <p>12 this was important, that necessitated me to take</p> <p>13 a look at it.</p> <p>14 MS. THOMPSON:</p> <p>15 Q Did you think it was important?</p> <p>16 MS. CURRY:</p> <p>17 Object to the form.</p> <p>18 A Well, after I read it, again, my sense</p> <p>19 was it doesn't really sway me one more -- one way</p> <p>20 or the other because they're -- they're</p> <p>21 essentially re-reviewing all the data that we</p> <p>22 know and coming to a different conclusion. I</p> <p>23 just think they got it wrong, unfortunately.</p> <p>24 MS. THOMPSON:</p>
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<p>1 Q Did you know that the Health Canada</p> <p>2 assessment was made pub- -- made available to the</p> <p>3 public?</p> <p>4 A Yes.</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 MS. THOMPSON:</p> <p>8 Q Do you believe that the Health Canada</p> <p>9 risk assessment is relevant to the topic today?</p> <p>10 MS. CURRY:</p> <p>11 Object to the form.</p> <p>12 A It doesn't change my opinion about</p> <p>13 biologic plausibility. It's a -- obviously, an</p> <p>14 opinion that's based upon a lot of data that I</p> <p>15 believe is reviewed by Taher, which is</p> <p>16 information data that I already was aware of, so</p> <p>17 it doesn't really sway me one way or the other.</p> <p>18 MS. THOMPSON:</p> <p>19 Q But my question was, did you deem it</p> <p>20 relevant?</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A Relevant to review.</p> <p>24 MS. THOMPSON:</p>	<p>1 Q But you will agree that it did provide</p> <p>2 an extensive review on the subject?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A It was, I thought, would be described</p> <p>6 as extensive.</p> <p>7 MS. THOMPSON:</p> <p>8 Q Did you review the statement of the</p> <p>9 methodology that accompanied the risk assessment?</p> <p>10 A I went -- I looked through it.</p> <p>11 Q I'll mark that as Exhibit 7.</p> <p>12 (DEPOSITION EXHIBIT NUMBER 7</p> <p>13 WAS MARKED IDENTIFICATION.)</p> <p>14 MS. THOMPSON:</p> <p>15 Q Is that what you saw?</p> <p>16 A I didn't see it printed like this with</p> <p>17 the color on it. Yeah.</p> <p>18 Q And let's just look at page 2 of the</p> <p>19 document titled "Weight of Evidence, General</p> <p>20 Principles and Current Applications in Health</p> <p>21 Canada."</p> <p>22 Does number 3, Role in Risk</p> <p>23 Assessments, generally outline the methodology</p> <p>24 that Health Canada applied to this risk</p>

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<p>1 assessment?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 A Yeah. I think it's a summary of</p> <p>5 what -- of how they approached it. That's my</p> <p>6 sense. Yep.</p> <p>7 MS. THOMPSON:</p> <p>8 Q And for the risk assessment, Health</p> <p>9 Canada assumed talc or talcum products to be</p> <p>10 nonasbestiform.</p> <p>11 Is that your understanding?</p> <p>12 A Yeah. I believe that's what they</p> <p>13 focused on.</p> <p>14 Q What does nonasbestiform mean?</p> <p>15 A I'm not going to go down the line of</p> <p>16 being an expert in asbestos.</p> <p>17 Q So do you not know what it means when</p> <p>18 the talc is considered nonasbestiform?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A I'm assuming they're addressing sort of</p> <p>22 mineral characterization of these substances.</p> <p>23 But again, I -- that's not my area of expertise.</p> <p>24 I'm not a geologist and it -- it in many ways is</p>	<p>1 MS. THOMPSON:</p> <p>2 Q So you're agreeing it's irrelevant what</p> <p>3 form the particles are in when --</p> <p>4 A I'm saying we don't have any data.</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 You have to let her get her --</p> <p>8 THE WITNESS:</p> <p>9 Okay.</p> <p>10 MS. CURRY:</p> <p>11 -- entire question out before you</p> <p>12 answer so that the court reporter can get</p> <p>13 everything down.</p> <p>14 MS. THOMPSON:</p> <p>15 Q No data isn't the same as irrelevant,</p> <p>16 and that's my question.</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A You know, again, I don't think I can</p> <p>20 answer that "yes" or "no."</p> <p>21 MS. THOMPSON:</p> <p>22 Q Is it important whether the substance</p> <p>23 in Johnson's baby powder and Shower to Shower is</p> <p>24 in a particulate form or in a fiber form?</p>
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<p>1 sort of irrelevant to looking at many of the</p> <p>2 studies which are just looking at talcum powder.</p> <p>3 MS. THOMPSON:</p> <p>4 Q Does it not matter to you whether that</p> <p>5 talc is in a particle or fiber -- fiber form?</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 A Well, I looked at, again, extensively</p> <p>9 all the data that was addressing whether talcum</p> <p>10 powder is a risk factor or plays a role in</p> <p>11 developing ovarian cancer. It is irrelevant in</p> <p>12 that setting whether there are components in</p> <p>13 there that go from asbestiform to heavy metals to</p> <p>14 fragrance. That data would be clear from those</p> <p>15 experiments, and they're not.</p> <p>16 MS. THOMPSON:</p> <p>17 Q So is the answer that -- is it</p> <p>18 irrelevant whether the particles are in a</p> <p>19 particulate form or in a fiber form?</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A Again, I -- that -- that experiment has</p> <p>23 not been done in the -- the -- in the -- in the</p> <p>24 data that I looked at.</p>	<p>1 MS. CURRY:</p> <p>2 Object to the form.</p> <p>3 A I don't know.</p> <p>4 MS. THOMPSON:</p> <p>5 Q You don't know if it's important?</p> <p>6 A I don't know if it's important.</p> <p>7 Q Okay. And is part of the reason is</p> <p>8 because you're not an expert in asbestos?</p> <p>9 MS. CURRY:</p> <p>10 Object to the form.</p> <p>11 A Again, I wasn't asked to evaluate the</p> <p>12 role of asbestos in ovarian cancer. I have an</p> <p>13 opinion on that based upon some of the</p> <p>14 epidemiologic studies.</p> <p>15 But in terms of the compositional</p> <p>16 analysis of talcum powder, that is not within the</p> <p>17 area of my expertise, and the various forms of</p> <p>18 asbestos in talc in terms of mineralogy is not</p> <p>19 something that I've spent time on.</p> <p>20 But, as I pointed out before, the</p> <p>21 experiments that have been conducted address that</p> <p>22 issue, which is they're using talcum powder. If</p> <p>23 it's got a variety of substances in it, any one</p> <p>24 of which match and play a role in ovarian cancer,</p>

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<p>1 it would have been obvious from the data and it's</p> <p>2 not.</p> <p>3 MS. THOMPSON:</p> <p>4 Q Is it your opinion that baby powder and</p> <p>5 Shower to Shower -- and you understand those are</p> <p>6 the two products that we're here to talk about</p> <p>7 today; right?</p> <p>8 A Yes. J & J products?</p> <p>9 Q Yes.</p> <p>10 Is it your opinion that those products</p> <p>11 have been proven safe?</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A So there's no data that I know of that</p> <p>15 says they're not safe.</p> <p>16 MS. THOMPSON:</p> <p>17 Q That's different. Have they been</p> <p>18 proven safe?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A Yes.</p> <p>22 MS. THOMPSON:</p> <p>23 Q And what data do you have as the basis</p> <p>24 for that, that they have been proven safe?</p>	<p>1 has it been proven unsafe, so --</p> <p>2 MR. MIZGALA:</p> <p>3 Object to the form.</p> <p>4 MS. THOMPSON:</p> <p>5 Q -- I'll ask the question again.</p> <p>6 Have these products been proven safe in</p> <p>7 your mind?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A Again, it is -- it is an issue about</p> <p>11 trying to prove a negative. The data is there</p> <p>12 are decades of use of this, this material,</p> <p>13 perineal dusting, with no evidence, no convincing</p> <p>14 evidence that it's unsafe. I conclude that it's</p> <p>15 a safe product.</p> <p>16 MS. THOMPSON:</p> <p>17 Q Do you believe that the molecular data</p> <p>18 proves the product safe?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A Can you define "molecular data"?</p> <p>22 MS. THOMPSON:</p> <p>23 Q The -- the studies that have been</p> <p>24 performed on talcum powder, do you believe they</p>
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<p>1 A Again, years and years of usage with</p> <p>2 these experiments and biologic systems,</p> <p>3 epidemiologic data is basically not exposing or</p> <p>4 uncovering any definitive data that that they're</p> <p>5 unsafe.</p> <p>6 Q So you believe the epidemiological data</p> <p>7 proves the product safe?</p> <p>8 A I don't think it -- it proves that it's</p> <p>9 a risk factor.</p> <p>10 Q Is that --</p> <p>11 A You're asking -- you're asking me to</p> <p>12 prove a negative. I can't do that.</p> <p>13 Q So you're not -- you're unable to prove</p> <p>14 that it's safe because you can't prove a</p> <p>15 negative?</p> <p>16 MS. CURRY:</p> <p>17 Object to the form.</p> <p>18 MS. THOMPSON:</p> <p>19 Q Is that what you're saying?</p> <p>20 A I get -- yeah. I think -- I think the</p> <p>21 issue in front of us is: Is it unsafe? And the</p> <p>22 answer to that is there's no data for it.</p> <p>23 Q Well, the issue is what I asked you.</p> <p>24 And my question was has it been proven safe, not</p>	<p>1 prove that the products are safe?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 A Just repeat that once more, please.</p> <p>5 MS. THOMPSON:</p> <p>6 Q The molecular studies that have been</p> <p>7 done on talcum powder, is it your opinion that</p> <p>8 they prove that the products are safe?</p> <p>9 MS. CURRY:</p> <p>10 Object to the form.</p> <p>11 A So I refine that a bit because I don't</p> <p>12 really consider them molecular studies. They're</p> <p>13 biologic studies, and there's a difference.</p> <p>14 The biologic studies which I reviewed,</p> <p>15 which I think is the sum total that's out there,</p> <p>16 are completely unconvincing, unconvincing that</p> <p>17 talcum powder is a -- plays a role in the</p> <p>18 development of ovarian cancer.</p> <p>19 MS. THOMPSON:</p> <p>20 Q But my question was is it your belief</p> <p>21 that the biologic studies confirm that the</p> <p>22 product is safe?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>

16 (Pages 58 to 61)

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<p>1 A Again, we're back sort of to that</p> <p>2 negative. I -- I think if -- I don't think they</p> <p>3 convince me at all that it's -- it's a risk or</p> <p>4 that it has any biologic activity on the target</p> <p>5 organ, which is the ovary. And then in the</p> <p>6 context of decades of use, then I would conclude</p> <p>7 that it's a safe product.</p> <p>8 MS. THOMPSON:</p> <p>9 Q And it's fine to say you can't</p> <p>10 answer -- you can't answer the question. But I</p> <p>11 need -- but I want to have an answer.</p> <p>12 And that is: Is it your opinion that</p> <p>13 the biologic studies show that the products are</p> <p>14 safe?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A Yeah. I -- I think -- I think</p> <p>18 certainly that -- I think we can say that the</p> <p>19 biologic studies do not reveal any untoward</p> <p>20 effects. It's not reliable. The experiments are</p> <p>21 not reliable. And so in that context, it's a</p> <p>22 safe product.</p> <p>23 I mean, again, you're asking me for a</p> <p>24 biologic experiment that proves something is</p>	<p>1 reviewing the assessment?</p> <p>2 A I believe so, but let me just --</p> <p>3 MS. CURRY:</p> <p>4 Do you have the marked Exhibit 4 there?</p> <p>5 I don't think the witness actually has</p> <p>6 the --</p> <p>7 Oh, I think it's in front of you here.</p> <p>8 I'm just gonna grab these marked</p> <p>9 exhibits for him. Thank you.</p> <p>10 MS. THOMPSON:</p> <p>11 I think his is the marked exhibit,</p> <p>12 unless I --</p> <p>13 MS. CURRY:</p> <p>14 Right. It was just in front of you.</p> <p>15 MS. THOMPSON:</p> <p>16 Oh, I -- yeah.</p> <p>17 MS. CURRY:</p> <p>18 He didn't have it. That's all.</p> <p>19 MS. THOMPSON:</p> <p>20 Sorry.</p> <p>21 A Yeah, this -- okay.</p> <p>22 Yeah. So they -- they essentially went</p> <p>23 through it in that kind of algorithm.</p> <p>24 MS. THOMPSON:</p>
Page 63	Page 65
<p>1 safe. I don't even know how to conduct an</p> <p>2 experiment like that.</p> <p>3 MS. THOMPSON:</p> <p>4 Q Okay. And again, you know, I can't</p> <p>5 answer that -- your question --</p> <p>6 A It's okay?</p> <p>7 Q -- is a fine answer. Yeah.</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 MS. THOMPSON:</p> <p>11 Q Back to the weight of the evidence</p> <p>12 document, it's your understanding that this is</p> <p>13 the evaluation that Health Canada applied to --</p> <p>14 A That's this one?</p> <p>15 Q Yeah.</p> <p>16 -- to answering the -- the question of</p> <p>17 whether talcum powder was a risk for the public</p> <p>18 in Canada; correct?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A Correct.</p> <p>22 MS. THOMPSON:</p> <p>23 Q And they also applied a Bradford Hill</p> <p>24 analysis? Is that your understanding from</p>	<p>1 Q I did not see any discussion in your</p> <p>2 report of a methodology similar to this. Is that</p> <p>3 right?</p> <p>4 A Correct.</p> <p>5 Q Did you perform a weight of the</p> <p>6 evidence of the data in this case?</p> <p>7 A So I approached the expert report based</p> <p>8 upon my experience, both scientifically and</p> <p>9 clinical. We do this -- we do this a lot,</p> <p>10 actually, where we'll do a complete review of the</p> <p>11 literature and then extract the information,</p> <p>12 dissect it in terms of paper by paper.</p> <p>13 As a scientist, we don't really weigh</p> <p>14 studies in a quantitative way. We don't -- it's</p> <p>15 really not like a meta-analysis where we're</p> <p>16 saying, okay, this is -- this is this weight</p> <p>17 versus that weight.</p> <p>18 But -- but the gestalt is, if you will,</p> <p>19 at the end of the day, we look at these studies</p> <p>20 and say do we believe -- do we think that the</p> <p>21 data and results are believable; do they -- do</p> <p>22 they support the conclusions. And we do that</p> <p>23 individually through all the studies.</p> <p>24 And my expert report, I think, outlines</p>

17 (Pages 62 to 65)

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<p>1 that very clearly.</p> <p>2 So I guess the answer to your question</p> <p>3 is at the end of the day, the conclusion is that</p> <p>4 we don't think -- I don't think the data supports</p> <p>5 a biologic plausibility for talc versus -- talc</p> <p>6 and the -- as a role in the development of</p> <p>7 ovarian cancer. That's the sum total of all that</p> <p>8 analysis.</p> <p>9 Q Did you perform a Bradford Hill</p> <p>10 analysis, per se?</p> <p>11 A Not in the expert report. It's really</p> <p>12 focused on biologic plausibility. I'm aware of</p> <p>13 Bradford Hill. Prior depositions, we talked</p> <p>14 about the elements, and I feel like I -- I</p> <p>15 certainly understand those criteria.</p> <p>16 Q But at least in this report, you didn't</p> <p>17 apply the criteria to this subject?</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A It's really focused on biologic</p> <p>21 plausibility, which, as you know, is one</p> <p>22 component of it.</p> <p>23 MS. THOMPSON:</p> <p>24 Q Correct.</p>	<p>1 Q Is it a credible scientific</p> <p>2 organization?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A I -- I think, to be fair, they -- they</p> <p>6 recognize this as a group that is careful and is</p> <p>7 invested in this. I would say, though, that</p> <p>8 they're not, as an organization, completely free</p> <p>9 of -- because of the way they're structured with</p> <p>10 WHO, completely free of outside influence or</p> <p>11 politics. That's my sense.</p> <p>12 MS. THOMPSON:</p> <p>13 Q And by outside influence and politics,</p> <p>14 where would that be coming from?</p> <p>15 A From World Health Organization, which</p> <p>16 is their sort of supervising body.</p> <p>17 Q And is it your belief that the World</p> <p>18 Health Organization is politically biased or</p> <p>19 subject to influence from outside?</p> <p>20 A Well, I think it's an organization</p> <p>21 that, by its nature, is, you know, a compendium</p> <p>22 of countries and societies. And, so, it's --</p> <p>23 let's just say it's not necessarily as sort of</p> <p>24 independent as the Academy, National Academy.</p>
Page 67	Page 69
<p>1 And you reviewed that IARC 2010</p> <p>2 document that we've marked as an exhibit; right.</p> <p>3 A This is when it was labeled as 2B;</p> <p>4 right?</p> <p>5 Q Yes.</p> <p>6 And -- and this -- well, this monograph</p> <p>7 was published in 2010; right?</p> <p>8 A Correct.</p> <p>9 Q Is it your understanding that it</p> <p>10 considered literature up to 2006? Correct?</p> <p>11 A Sounds about right, yes.</p> <p>12 Q What is IARC?</p> <p>13 A Well, it's an international agency for</p> <p>14 research on cancer. Part of what they -- their</p> <p>15 responsibility is is to look at environmental</p> <p>16 risks for -- and -- and to sort of attempt to</p> <p>17 quantify them, identify them and quantify them</p> <p>18 for the development of cancer.</p> <p>19 Q Is it generally thought to be a</p> <p>20 reputable scientific organization?</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A How do you define "reputable"?</p> <p>24 MS. THOMPSON</p>	<p>1 Q And by that you mean the National</p> <p>2 Academy of Science and Medicine Engineering, now</p> <p>3 titled?</p> <p>4 A Yes.</p> <p>5 Q Okay. And I believe we talked about</p> <p>6 before this --</p> <p>7 A Uh-huh.</p> <p>8 Q -- this monograph applies to talc not</p> <p>9 containing asbestiform fibers, but that is not</p> <p>10 your area of expertise; correct?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A Correct.</p> <p>14 MS. THOMPSON:</p> <p>15 Q And you are aware that there's a</p> <p>16 different IARC monograph published in 2012 that</p> <p>17 would cover talc containing asbestos or talc</p> <p>18 containing asbestiform fibers; correct?</p> <p>19 A I don't think I've seen that.</p> <p>20 Q That would be 2012, the 100C. I</p> <p>21 believe it's on your --</p> <p>22 A Is it?</p> <p>23 Q -- reliance list.</p> <p>24 A Do you have a copy?</p>

18 (Pages 66 to 69)

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<p>1 Q Yeah. It's number 77.</p> <p>2 A 77.</p> <p>3 Q Arsenic, Metals, Fibers and Dust?</p> <p>4 A Oh, I think I -- I'm sorry. That's</p> <p>5 coming back to me. It was a small -- yeah.</p> <p>6 Q And did you -- did you review that IARC</p> <p>7 monograph?</p> <p>8 A Yeah. There was a -- what -- what</p> <p>9 I looked at was a subset of the entire document.</p> <p>10 Yeah.</p> <p>11 Q Did you look at the section with</p> <p>12 asbestos?</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A I believe so, yeah.</p> <p>16 MS. THOMPSON:</p> <p>17 Q Did you look at the section with heavy</p> <p>18 metals?</p> <p>19 A No.</p> <p>20 Q Are you aware that that document, 2012,</p> <p>21 100C, includes all forms of asbestos and talc</p> <p>22 containing asbestiform fibers?</p> <p>23 A That sounds correct.</p> <p>24 Q But you're not sure about that today?</p>	<p>1 Object to the form.</p> <p>2 A It's detailed.</p> <p>3 MS. THOMPSON:</p> <p>4 Q Going to the FDA response letter, at</p> <p>5 least by volume, would you agree that this FDA</p> <p>6 letter is a less extensive review?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A Less pages.</p> <p>10 MS. THOMPSON:</p> <p>11 Q That's kind of what I was getting at.</p> <p>12 How about references?</p> <p>13 A Yeah.</p> <p>14 Q So, essentially, the FDA response</p> <p>15 letter in 2014 does not include a description of</p> <p>16 the methodology or an extensive reference list.</p> <p>17 Is that fair --</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 MS. THOMPSON:</p> <p>21 Q -- statement?</p> <p>22 A Well, I -- again, I think a little bit</p> <p>23 you're comparing apples and oranges in the sense</p> <p>24 that the purpose for these documents is somewhat</p>
Page 71	Page 73
<p>1 MS. CURRY:</p> <p>2 Object to the form.</p> <p>3 A Well, as I said, I'm not a asbestos</p> <p>4 expert. But that -- that IARC volume is focused</p> <p>5 on fibers, so that makes sense.</p> <p>6 MS. THOMPSON:</p> <p>7 Q And have you reviewed the preamble to</p> <p>8 the IARC monographs? It's included in --</p> <p>9 A Yeah.</p> <p>10 Q -- in exhibit --</p> <p>11 A I looked through it.</p> <p>12 Q Okay.</p> <p>13 A It's voluminous.</p> <p>14 Q And does that describe the -- the</p> <p>15 methodology that IARC applies when it's looking</p> <p>16 to determine whether a substance is carcinogenic</p> <p>17 or not?</p> <p>18 A Yes. It's a list of all the</p> <p>19 participants, the general principles, the</p> <p>20 methodology.</p> <p>21 Q And you would agree, similar to Health</p> <p>22 Canada, that that methodology is extensive as</p> <p>23 well?</p> <p>24 MS. CURRY:</p>	<p>1 different in that this is a letter from the FDA</p> <p>2 in response to a -- I think it was a citizen's</p> <p>3 petition. They're not gonna give -- they're not</p> <p>4 gonna send this back to a citizen's petition</p> <p>5 because I think the citizen's petition would be</p> <p>6 insulted because they're not going to be able to</p> <p>7 read it. It's more of a letter than the -- what</p> <p>8 their opinion is.</p> <p>9 Oh. Sorry.</p> <p>10 Q And you're referring to that IARC --</p> <p>11 A Yeah.</p> <p>12 Q -- 2010 monograph. Yeah.</p> <p>13 A Yeah.</p> <p>14 Q Fair enough.</p> <p>15 However, you would consider the FDA a</p> <p>16 credible source?</p> <p>17 A Yes.</p> <p>18 Q Let's look at your CV. And you have</p> <p>19 been a prolific researcher. Would you agree?</p> <p>20 A I survive.</p> <p>21 Q I -- I think there are approximately</p> <p>22 400 published papers. Is that close?</p> <p>23 A Correct.</p> <p>24 Q You have a lot of coauthors on these</p>

19 (Pages 70 to 73)

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<p>1 papers. Am I right?</p> <p>2 A Correct.</p> <p>3 Q On some, you're the lead author;</p> <p>4 correct?</p> <p>5 A Correct.</p> <p>6 Q What does the role of lead author</p> <p>7 usually entail?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A So let me -- let me step back and</p> <p>11 define that. I would say anchor positions.</p> <p>12 MS. THOMPSON:</p> <p>13 Q Okay.</p> <p>14 A So first author is usually the person</p> <p>15 who has done most of the work. And, it</p> <p>16 actually -- my first authorship positions have</p> <p>17 sort of faded with time because I take the other</p> <p>18 anchor position, which is the senior author,</p> <p>19 where you're providing guidance, mentorship, and</p> <p>20 then you -- you ultimately are responsible for</p> <p>21 the quality of the paper.</p> <p>22 Q And -- and that --</p> <p>23 A Yeah.</p> <p>24 Q -- that person is -- is often listed</p>	<p>1 A No. I think OCAC is a lot like that.</p> <p>2 MS. THOMPSON:</p> <p>3 Q They're providing tissue samples or are</p> <p>4 they providing expertise?</p> <p>5 A Well, OCAC is the consortium, so</p> <p>6 it's -- it's composed of all of those</p> <p>7 institutions. And those institutions are</p> <p>8 providing specimens. And then the authors from</p> <p>9 those institutions end up on the paper.</p> <p>10 Q How are the authors of the consortium's</p> <p>11 publications selected?</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A Specific in GWAS or in general?</p> <p>15 MS. THOMPSON:</p> <p>16 Q In OCAC.</p> <p>17 A OCAC. Well, I'm not sure I can quote</p> <p>18 you OCAC rules, but the general guidelines would</p> <p>19 be that from every institution that participated,</p> <p>20 there'd be a primary author. If -- if there was</p> <p>21 somebody else at the institution who specifically</p> <p>22 did something important for that paper, they</p> <p>23 might take two authors. But usually there's a</p> <p>24 limit because you just -- OCAC, I believe, has --</p>
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<p>1 last. Is that right?</p> <p>2 A That's right.</p> <p>3 Q Okay. And can I assume that the</p> <p>4 authors in the middle have varying roles but all</p> <p>5 participate in the preparation of the manuscript</p> <p>6 in some sense?</p> <p>7 A Right. I mean, it becomes -- you</p> <p>8 probably can guess -- somewhat problematic when</p> <p>9 you look at GY studies when there are almost more</p> <p>10 authors than specimens. So the idea there is</p> <p>11 that the individuals in -- in between are still</p> <p>12 contributing to the paper. They're -- they may</p> <p>13 be providing specimens.</p> <p>14 Q And I believe in GWAS, the -- the</p> <p>15 recruitment for GWAS are researchers that can</p> <p>16 provide tissue specimens for the group that's</p> <p>17 analyzing them. Is that a fair --</p> <p>18 A It's a big point. It's -- it's a big</p> <p>19 part of it. Yeah.</p> <p>20 Q And you'd agree that that's different</p> <p>21 from the consortium that we discussed earlier,</p> <p>22 that OCAC consortium; right?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>	<p>1 I'm guessing -- 50 to maybe even 100</p> <p>2 institutions. So if you were to allow unlimited</p> <p>3 authors, it would be unmanageable.</p> <p>4 Q Would the authors typically be</p> <p>5 considered to have expertise in the particular</p> <p>6 area that they're publishing in?</p> <p>7 A Yes.</p> <p>8 Q Would they typically have previous</p> <p>9 scholarly work or publications?</p> <p>10 MS. CURRY:</p> <p>11 Object to the form.</p> <p>12 A Usually.</p> <p>13 MS. THOMPSON:</p> <p>14 Q Would they typically have a -- a good</p> <p>15 reputation in the scientific or medical</p> <p>16 community?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A I hope so.</p> <p>20 MS. THOMPSON:</p> <p>21 Q Would they typically be knowledgeable</p> <p>22 in that respective field that they're called upon</p> <p>23 to contribute to the --</p> <p>24 MS. CURRY:</p>

20 (Pages 74 to 77)

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<p>1 Object to the form.</p> <p>2 A Yeah. I mean, I think it would be</p> <p>3 very -- again, these GWAS studies -- I'm sorry --</p> <p>4 the GWAS studies are in some ways really unique</p> <p>5 in that there's so many authors. There may be</p> <p>6 individuals in that list who -- who while they're</p> <p>7 ovarian cancer researchers, they could be fairly</p> <p>8 junior, and they may have just provided some</p> <p>9 specimens. Yeah.</p> <p>10 MS. THOMPSON:</p> <p>11 Q Yeah. And I'm not as interested in the</p> <p>12 GWAS because they do have, you know, a whole</p> <p>13 number.</p> <p>14 A Yeah.</p> <p>15 Q But I'm thinking more of the Australian</p> <p>16 consortium, the OCAC, the -- the other ones where</p> <p>17 it looks, at least by appearance, that you're --</p> <p>18 the authors are chosen because they're experts</p> <p>19 in -- in a particular area. For example,</p> <p>20 epidemiology. Would you agree with that</p> <p>21 statement?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A I think that's true -- I think that's</p>	<p>1 of careful thought.</p> <p>2 MS. THOMPSON:</p> <p>3 Q And -- and I'd assume they'd be</p> <p>4 qualified in their area of expertise for the same</p> <p>5 reason, or else you wouldn't choose them. Right?</p> <p>6 A It would be hard for them to contribute</p> <p>7 in a meaningful way if they don't know what</p> <p>8 they're doing.</p> <p>9 Q Okay. Looking at your CV, are there</p> <p>10 any coauthors that you can identify that you</p> <p>11 would not regard as qualified in their respective</p> <p>12 fields?</p> <p>13 A I'm not gonna be able to answer that.</p> <p>14 I've got 400 publications and probably several</p> <p>15 thousand authors.</p> <p>16 Q So do you think there would be some</p> <p>17 that you could identify as not being credible?</p> <p>18 A Not that I know of.</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A Again, this is realtime, so if we go</p> <p>22 back to my Ph.D., which was on the measles virus</p> <p>23 back when I was a young lad, I don't know that</p> <p>24 field anymore, and I don't know what those</p>
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<p>1 true as a -- as general guideline, yeah.</p> <p>2 MS. THOMPSON:</p> <p>3 Q And would the same be true for a paper</p> <p>4 that you're publishing? Would you look for</p> <p>5 coauthors -- either as an anchor or a senior,</p> <p>6 would you look for coauthors that are credible?</p> <p>7 A Well, you know, when you do these</p> <p>8 experiments, you're not really out looking for</p> <p>9 authors. You're doing the experiments, and the</p> <p>10 people who do them, help you design a project,</p> <p>11 deserve authorship. Those are the guidelines.</p> <p>12 And if you're asking would I put</p> <p>13 somebody who I thought was not credible on an</p> <p>14 author list, I'd be very bothered by that. But</p> <p>15 you'd have to define what "credible" means.</p> <p>16 Q Yeah. So I guess rather than choosing</p> <p>17 someone as a coauthor, I should have rephrased</p> <p>18 that. Choosing someone to work on a project that</p> <p>19 would later be published, you can assume that</p> <p>20 person would be credible; correct?</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A Yeah. I choose my collaborators, like</p> <p>24 others, other scientists, with a certain amount</p>	<p>1 individuals have done.</p> <p>2 It's a realtime process. Sometimes</p> <p>3 individuals who seem to be very, very good</p> <p>4 scientists later on in life will get involved in</p> <p>5 scientific misconduct. That may not have been at</p> <p>6 all relevant for when you put that person on your</p> <p>7 paper.</p> <p>8 (DEPOSITION EXHIBIT NUMBER 8</p> <p>9 WAS MARKED IDENTIFICATION.)</p> <p>10 MS. THOMPSON:</p> <p>11 Q I'm gonna just give you a list of some</p> <p>12 coauthors that I pulled off your CV. And would</p> <p>13 you look at that list?</p> <p>14 A Uh-huh.</p> <p>15 Q I narrowed it down from a couple</p> <p>16 thousand to a more manageable number. Are there</p> <p>17 any names on that list that you could identify as</p> <p>18 not being credible?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 MS. THOMPSON:</p> <p>22 Q And that list is marked as Exhibit --</p> <p>23 Dr. Birrer, can you --</p> <p>24 A 8.</p>

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<p>1 Q -- 8.</p> <p>2 A So I would say of this list,</p> <p>3 probably -- I'm estimating -- about 20 percent of</p> <p>4 these people, I'm -- I'm not sure I quite</p> <p>5 remember what paper they're on. But the rest of</p> <p>6 them I know because they're high profile. I</p> <p>7 don't see anybody here that I would say is not a</p> <p>8 good scientist.</p> <p>9 Q And qualified in their respective</p> <p>10 areas?</p> <p>11 A Yes.</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 MS. THOMPSON:</p> <p>15 Q And some -- at least some on the list</p> <p>16 you published with multiple times. Is that fair</p> <p>17 to say?</p> <p>18 A Yeah.</p> <p>19 Q Dr. Birrer, throughout your report you,</p> <p>20 at least at times, used the term "talc." What</p> <p>21 are you referring to when you say talc?</p> <p>22 A So there's two levels of relevance</p> <p>23 here. One is for epidemiologic studies or</p> <p>24 studies that were -- that were conducted. A</p>	<p>1 sense is they command the market. But I'm not --</p> <p>2 I'm not in the supermarket a lot.</p> <p>3 Q And not in the baby powder section?</p> <p>4 A No.</p> <p>5 Q And what is contained in the</p> <p>6 Johnson's -- in Johnson's baby powder, to your</p> <p>7 understanding?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A Talc. And I know that's an issue</p> <p>11 that's come up in terms of are there other</p> <p>12 things. I mean, clearly there are other things</p> <p>13 that -- the product smells nice, so there must be</p> <p>14 some fragrance.</p> <p>15 MS. THOMPSON:</p> <p>16 Q Okay.</p> <p>17 A But I don't know of any -- first of</p> <p>18 all, I don't -- that's not my area of expertise.</p> <p>19 I've certainly never conducted any experiments</p> <p>20 and tried to figure out what's in it and -- and</p> <p>21 wouldn't consider myself an expert in the whole</p> <p>22 mineralogy issue.</p> <p>23 Q So that would be talc, the mineral. Do</p> <p>24 you have an opinion as to whether there is a such</p>
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<p>1 subset of the -- of the studies that were</p> <p>2 conducted in the lab were actually dealing with</p> <p>3 talcum powder.</p> <p>4 But there are experiments in particular</p> <p>5 where individuals are using sigma-produced talc.</p> <p>6 So it's -- it's -- it's a bit of a mixture. But</p> <p>7 I think, in particular in the epi studies, a lot</p> <p>8 of them are just okay to use powder.</p> <p>9 Q So to -- to the extent both of us can,</p> <p>10 we can try to say whether we're referring to</p> <p>11 talcum powder or talc, as you described, so</p> <p>12 let's -- let's both try to do that, to the extent</p> <p>13 possible, because it can get confusing.</p> <p>14 A I completely concur.</p> <p>15 Q Okay. Okay. I'm glad we agree on</p> <p>16 that.</p> <p>17 Do you know what Johnson & Johnson's</p> <p>18 market share of the talcum powder product has</p> <p>19 been over the years?</p> <p>20 A I don't.</p> <p>21 Q If I told you it was 60 to 70 percent,</p> <p>22 would you have any basis to disagree with that</p> <p>23 number?</p> <p>24 A I actually wouldn't, because I -- my</p>	<p>1 thing as pure talc?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 A You know, my -- you know, my sense is</p> <p>5 in that some of the experiments where this</p> <p>6 product is actually bought not cosmetically, but</p> <p>7 I've seen references to sigma-produced talc, that</p> <p>8 that's a -- that's a purified form of it.</p> <p>9 MS. THOMPSON:</p> <p>10 Q And, so, by pure -- purified form, you</p> <p>11 would mean that it does not con- -- contain</p> <p>12 impurities; correct?</p> <p>13 A It would not contain something else.</p> <p>14 Q Would you consider it pure if it</p> <p>15 contained talc fibers?</p> <p>16 MS. CURRY:</p> <p>17 Object to the form.</p> <p>18 A I don't -- I don't think I can answer</p> <p>19 that.</p> <p>20 MS. THOMPSON:</p> <p>21 Q So no opinion on -- on that issue.</p> <p>22 A Yeah.</p> <p>23 Q Are you familiar with the various</p> <p>24 grades of talc?</p>

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<p>1 A No.</p> <p>2 Q Do you have any knowledge regarding the</p> <p>3 particle size of Johnson's baby powder or Shower</p> <p>4 to Shower?</p> <p>5 A Again, that's a little bit outside my</p> <p>6 area of expertise. My understanding is, you</p> <p>7 know, talc ranges from 10 microns to larger</p> <p>8 sizes. But it's not something I systematically</p> <p>9 explored. Even the expert reports here that</p> <p>10 focused on the mineralogy, I looked at it but not</p> <p>11 in any great detail.</p> <p>12 Q And if you were told that there are</p> <p>13 also smaller particles than 10 microns, that</p> <p>14 wouldn't surprise you?</p> <p>15 A I think there's a range.</p> <p>16 Q Fair enough.</p> <p>17 A I don't know how -- you know, again, I</p> <p>18 know there's references to ultrafine, et cetera,</p> <p>19 et cetera. I don't have definitive knowledge or</p> <p>20 data that that is true.</p> <p>21 Q Okay. But, as far as you know, the</p> <p>22 particle size is -- is mixed?</p> <p>23 A Uh-huh.</p> <p>24 Q It's not a standard size like you might</p>	<p>1 Q It was the -- it was a report that</p> <p>2 addressed the fragrance chemicals in talcum</p> <p>3 powder. Do you remember seeing that? I don't</p> <p>4 remember whether it's on your list. Oh.</p> <p>5 A Is that plaintiff?</p> <p>6 Q You don't have Dr. Crowley's report.</p> <p>7 A Yeah.</p> <p>8 Q Did you know if there was a -- an</p> <p>9 expert report that specifically addressed the</p> <p>10 fragrance -- fragrance chemical presence in baby</p> <p>11 powder?</p> <p>12 A Not that I know of.</p> <p>13 Q So I -- I can assume that you don't</p> <p>14 know why you weren't provided Dr. Crowley's</p> <p>15 report?</p> <p>16 MS. CURRY:</p> <p>17 Object to the form.</p> <p>18 A It's not on my list.</p> <p>19 MS. THOMPSON:</p> <p>20 Q Did you ask if anyone had looked at the</p> <p>21 actual chemicals in baby powder?</p> <p>22 A I didn't specifically go through that,</p> <p>23 no.</p> <p>24 Q It -- is it important for you to know</p>
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<p>1 see, for example, in a pleurodesis talc?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 A I don't -- I can't say that.</p> <p>5 MS. THOMPSON:</p> <p>6 Q Okay.</p> <p>7 A But based on my rudimentary</p> <p>8 understanding of mineralogy here, that there's a</p> <p>9 range.</p> <p>10 Q Have you ever looked at the label on a</p> <p>11 bottle of baby powder?</p> <p>12 A I don't recall that.</p> <p>13 Q So you don't know what would be listed</p> <p>14 on the label?</p> <p>15 A No.</p> <p>16 Q But you're assuming it has some kind of</p> <p>17 fragrances in it?</p> <p>18 A I think that's a safe assumption. I</p> <p>19 have smelled it.</p> <p>20 Q Haven't we all.</p> <p>21 Did you read Dr. Crowley's report?</p> <p>22 Do you remember Dr. Crowley's report?</p> <p>23 A That's not coming to mind. Can -- do</p> <p>24 you have it?</p>	<p>1 the quality of talcum powder?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 A And how do you define "quality"?</p> <p>5 MS. THOMPSON:</p> <p>6 Q I -- I define "quality" as the absence</p> <p>7 of the amount and types of impurities.</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A How do you define "impurities"?</p> <p>11 MS. THOMPSON:</p> <p>12 Q Something that's not pure talc.</p> <p>13 A Okay. Again, I -- I'll come back to</p> <p>14 this theme. I think -- I didn't go down that</p> <p>15 road. It's not my area of expertise. But, more</p> <p>16 importantly, I was asked to sort of review the</p> <p>17 total data that suggested there might be a role</p> <p>18 for talc in ovarian cancer, regard- -- talcum</p> <p>19 powder, regardless of what's in it.</p> <p>20 So in that context, impurities,</p> <p>21 fragrance, heavy metals, it doesn't matter. We</p> <p>22 would see the data. So I felt pretty comfortable</p> <p>23 that that's the -- that's the important theme for</p> <p>24 my job.</p>

23 (Pages 86 to 89)

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<p>1 Q Is it important for you to know the</p> <p>2 min- -- mineral content of a talcum powder</p> <p>3 product if you are intending to assess its</p> <p>4 potential health effects?</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 A Would you just repeat that, please?</p> <p>8 MS. THOMPSON:</p> <p>9 Q Is it important to know the mineral</p> <p>10 content of a talcum powder product if you are</p> <p>11 intending to assess its potential health effects?</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A You know, again, I think in terms of</p> <p>15 reviewing the literature, no. I mean, it's</p> <p>16 talcum and it's talcum powder. It's a</p> <p>17 representative of what's on the market.</p> <p>18 So regardless of what's there or not,</p> <p>19 even from a mineral standpoint, we can make a</p> <p>20 judgment as to whether that's providing data that</p> <p>21 supports whether it's a risk factor or biologic</p> <p>22 plausibility for a role in development of ovarian</p> <p>23 cancer.</p> <p>24 MS. THOMPSON:</p>	<p>1 MS. THOMPSON:</p> <p>2 Q For a potential health effect.</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A There's no data for that. I can't</p> <p>6 develop a mechanism when, in fact, there's no</p> <p>7 biologic plausibility for talcum powder in a role</p> <p>8 of ovarian cancer.</p> <p>9 MS. THOMPSON:</p> <p>10 Q Well, it sounds like what you're saying</p> <p>11 is if you decide that talcum powder doesn't cause</p> <p>12 ovarian cancer, then there's no reason to even</p> <p>13 look at whether there's a plausible mechanism or</p> <p>14 not.</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 MS. THOMPSON:</p> <p>18 Q Is that --</p> <p>19 A Well, I'm not sure what mechanism we're</p> <p>20 looking at. We're looking at a mechanism that an</p> <p>21 agent doesn't cause cancer? That does -- makes</p> <p>22 no sense to me.</p> <p>23 Q We're looking at what a mechanism could</p> <p>24 be if it could cause cancer, as a hypothetical.</p>
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<p>1 Q So even in your determination of</p> <p>2 whether a biologic mechanism is plausible or not,</p> <p>3 it doesn't matter what the mineral content of the</p> <p>4 baby powder is?</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 A As long as that baby powder's been</p> <p>8 tested in that experiment, it doesn't matter.</p> <p>9 MS. THOMPSON:</p> <p>10 Q And that goes for whether the baby</p> <p>11 powder contains asbestos?</p> <p>12 A Well, again, I -- I think if it</p> <p>13 contained asbestos, that would show a signal in</p> <p>14 those experiments. Now, we would see it. We may</p> <p>15 not know it's related to asbestos, fragrance or</p> <p>16 whatever, but the experiments would be</p> <p>17 reproducible and dispositive. And in my</p> <p>18 experience, they're not.</p> <p>19 Q But the question is, does that -- would</p> <p>20 that explain a mechanism if there's asbestos in</p> <p>21 the baby powder?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A Mechanism for what?</p>	<p>1 MS. CURRY:</p> <p>2 Object to the form.</p> <p>3 A No. I -- a mechanism for a</p> <p>4 hypothetical. I -- you know, again, that -- we</p> <p>5 don't need the hypothetical. We've tested talcum</p> <p>6 in those experiments. There's no data to support</p> <p>7 biologic plausibility. So why are -- why would</p> <p>8 we be trying to think about a hypothetical</p> <p>9 component to produce a mechanism for a biologic</p> <p>10 activity that we haven't seen?</p> <p>11 MS. THOMPSON:</p> <p>12 Q What experiments are you referring to?</p> <p>13 A I would say primarily the ones that are</p> <p>14 in my expert report. That really is a sum- --</p> <p>15 Q Which experiments in your report? We</p> <p>16 can go through your report if you want.</p> <p>17 A I'm -- yeah.</p> <p>18 Q I'm looking for the experiments that</p> <p>19 show that there's no biologic effect.</p> <p>20 A So Buz'Zard is one that frequently --</p> <p>21 Q And is it your opinion that Buz'Zard</p> <p>22 shows no biologic effect?</p> <p>23 A There's nothing in that paper that's</p> <p>24 reliable in terms of showing biologic</p>

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<p>1 plausibility.</p> <p>2 Q And we'll get to the others.</p> <p>3 So you're referring to --</p> <p>4 A Yes.</p> <p>5 Q -- Buz'Zard, Shukla?</p> <p>6 A Shukla. Just hang on. Yeah.</p> <p>7 Buz'Zard, Shukla and Hamilton.</p> <p>8 Q And I'm going to assume you include</p> <p>9 Dr. Saed in that?</p> <p>10 A Correct.</p> <p>11 Q Although we're going to get into more</p> <p>12 detail in that later.</p> <p>13 A Exactly.</p> <p>14 Q And you're aware of the other animal</p> <p>15 studies that show inflammatory effects; right?</p> <p>16 MS. CURRY:</p> <p>17 Object to the form.</p> <p>18 A You have to go through those and define</p> <p>19 that.</p> <p>20 MS. THOMPSON:</p> <p>21 Q Okay.</p> <p>22 A Because it's pretty broad literature.</p> <p>23 You're assuming -- you're referring to</p> <p>24 Keskin?</p>	<p>1 What is your understanding of how these</p> <p>2 products are used by women?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A Baby powder?</p> <p>6 MS. THOMPSON:</p> <p>7 Q And -- and we're talking about, at</p> <p>8 least for these cases, in the perineal area.</p> <p>9 A Yeah.</p> <p>10 Q Do you have any knowledge from</p> <p>11 conversations with women or literature or any</p> <p>12 other source as to how it's applied, whether it's</p> <p>13 standing, lying down, in the underwear, on a</p> <p>14 sanitary napkin, shaken into hands? Did you have</p> <p>15 any understanding of -- of those issues?</p> <p>16 MS. CURRY:</p> <p>17 Object to the form.</p> <p>18 A I would say not a systematic, shall we</p> <p>19 say, meta-analysis of baby powder use. I</p> <p>20 certainly, over years in the clinic, am familiar</p> <p>21 with women who use baby powder. You know, my</p> <p>22 sense is that most dust the perineum usually</p> <p>23 standing up. I -- but again, I can't say that's</p> <p>24 a scientific evaluation. I have some experience</p>
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<p>1 Q There are studies going back to the</p> <p>2 '40s and '50s with intraperitoneal inflammatory</p> <p>3 effects with -- in the presence of talc.</p> <p>4 You're aware of those?</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 A There is a big literature.</p> <p>8 MS. THOMPSON:</p> <p>9 Q And understanding that there are</p> <p>10 different histologic subtypes of epithelial</p> <p>11 ovarian cancer, can we agree that if one of us</p> <p>12 refers to ovarian cancer in a general sense, that</p> <p>13 we're referring to epithelial ovarian cancer?</p> <p>14 A I would not include germ -- you know,</p> <p>15 germ cell tumors in this.</p> <p>16 Q Stromal -- we're excluding stromal --</p> <p>17 A And stromal, yeah. It's epithelial,</p> <p>18 correct.</p> <p>19 Q Okay. So we're on the same page there?</p> <p>20 A With -- with the caveat being, and we</p> <p>21 do discuss this in the report about -- even</p> <p>22 within the epithelial component, we now realize</p> <p>23 there are different types of tumors.</p> <p>24 Q Understood.</p>	<p>1 with my wife. So I -- I -- it's a certain --</p> <p>2 some general concept of how it's done, yeah.</p> <p>3 MS. THOMPSON:</p> <p>4 Q Would you agree, at least, that, for</p> <p>5 most women, it would be applied in a -- in a</p> <p>6 habitual manner?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A Yeah, I think it's important to define</p> <p>10 that. It would certainly be repetitive. Is it</p> <p>11 something -- you know, habitual sounds to me</p> <p>12 like -- almost like an addict. And I don't -- I</p> <p>13 don't think that's the case.</p> <p>14 MS. THOMPSON:</p> <p>15 Q No. I didn't mean it -- mean in that</p> <p>16 term.</p> <p>17 I meant that it's -- and this has been</p> <p>18 reported in the literature, I believe you're</p> <p>19 aware --</p> <p>20 A Uh-huh.</p> <p>21 Q -- that most women do it the same way</p> <p>22 every day or whatever schedule they're on.</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>

25 (Pages 94 to 97)

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<p>1 A I would think that there'd be some 2 consistency on that. I -- I will say this 3 parenthetically, you may get to it later on, but 4 I do think, based on what we're just discussing, 5 it's very hard to -- it's very hard to quantify 6 amount of use. I really do. 7 MS. THOMPSON: 8 Q And I think we will get to that. 9 A Okay. 10 Q But -- but -- so it's hard to quantify 11 how much a woman is using on any given 12 application; correct? 13 A (Nods affirmatively.) 14 Q And it's hard -- 15 MS. CURRY: 16 You have to say "yes" or "no" versus 17 head shakes because the court reporter will not 18 be able to get that down. 19 A It says "nods affirmatively." 20 Yes. 21 MS. CURRY: 22 She was able to in that instance. I 23 stand corrected, but for -- 24 THE WITNESS:</p>	<p>1 be true for a number of environmental 2 exposures -- 3 MS. CURRY: 4 Object to the form. 5 MS. THOMPSON: 6 Q -- that difficulty in quantifying how 7 much a particular individual is exposed to? 8 A Well, you'd have to give me some 9 examples on that. I mean, I think for cigarette 10 smoke, it actually is quite quantifiable. 11 Q Cigarette smoke, I agree. 12 How about a household or domestic 13 exposure to asbestos, for example? 14 A I guess you could quantify the amount 15 of asbestos-containing material in the house, 16 but -- 17 Q How about a spouse coming home from 18 occupational exposure? 19 A Yeah. It would be a challenge. 20 Q How about chemicals in water source? 21 A That should be measurable. 22 Q Over time? 23 A Multiple samples. 24 Q How about --</p>
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<p>1 She's very good. 2 MS. THOMPSON: 3 Q And -- and if there were talc that 4 reached the vagina or the upper genital tract, it 5 would be hard to quantify how much that would be; 6 right? 7 A Yes. 8 Q But you'll have to agree, but -- that 9 not being able to quantify it isn't a reason not 10 to study the issue. Right? 11 MS. CURRY: 12 Object to the form. 13 A I think that's a fair statement in 14 that, you know, if it's important, you need to do 15 it. I just think that, for the reasons you just 16 said, quantifying it is -- is difficult, not only 17 in individual applications, how much actually 18 would get where, but this longitudinal issue. 19 While I think there's some consistency, do women 20 use it for a while and then stop using it and how 21 often do they change? I think there's a whole 22 issue on that, too. 23 MS. THOMPSON: 24 Q And wouldn't you agree that that would</p>	<p>1 A And -- and potentially even the 2 patient. 3 Q How about exposure to a pesticide? 4 A Yeah. That would be more of a 5 challenge. Yeah. 6 Q So there's certainly other -- 7 A Some variability. 8 Q -- other situations where it's 9 challenging to quantify the exposure to an 10 individual over time. 11 MS. CURRY: 12 Object to the form. 13 A Yes. 14 MS. THOMPSON: 15 Q Other than a literature or document 16 review, you -- I think I asked you this before 17 but I'm gonna just ask it again since it's in my 18 outline here. 19 Other than a literature and document 20 review, have you done any research on talcum 21 powder and ovarian cancer? 22 A No. 23 Q And that would include in vitro 24 research and in vivo; correct?</p>

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<p>1 A Correct.</p> <p>2 Q And you've never published an article</p> <p>3 on talcum powder and ovarian cancer. Is that</p> <p>4 correct?</p> <p>5 A No.</p> <p>6 Q Have you ever given a talk on talcum</p> <p>7 powder and ovarian cancer?</p> <p>8 A No.</p> <p>9 Q Have you discussed your opinions in</p> <p>10 this case with anyone?</p> <p>11 A No, other than counsel.</p> <p>12 Q No colleagues?</p> <p>13 A No.</p> <p>14 Q Did you attend the recent SGO</p> <p>15 conference in Hawaii?</p> <p>16 A Hawaii's a nice place. I did.</p> <p>17 Q Did you discuss talcum powder with any</p> <p>18 of your colleagues at the meeting?</p> <p>19 A I'd never been there before.</p> <p>20 I did not.</p> <p>21 Q Do you know Liz Swisher?</p> <p>22 A I do know Liz, yes.</p> <p>23 Q Do you know her from professional</p> <p>24 meetings and other interactions?</p>	<p>1 Q Do you know why she's no longer an</p> <p>2 expert?</p> <p>3 A I don't.</p> <p>4 Q Do you know Dr. Huh?</p> <p>5 A I do know Dr. Huh. Warner. Uh-huh.</p> <p>6 Q Do you know why Dr. Huh is not serving</p> <p>7 as an expert for the defendants in the MDL?</p> <p>8 A No.</p> <p>9 Q Does University of Alabama know that</p> <p>10 you are serving as a paid expert for</p> <p>11 Johnson & Johnson --</p> <p>12 A Yes.</p> <p>13 Q -- in this case?</p> <p>14 Do you know how much money</p> <p>15 Johnson & Johnson has contributed to the</p> <p>16 University of Alabama and your lab?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A I --</p> <p>20 MS. THOMPSON:</p> <p>21 Q Let me rephrase that question because I</p> <p>22 don't like being "contributed."</p> <p>23 Do you know how much money</p> <p>24 Johnson & Johnson has paid to University of</p>
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<p>1 A I know her professionally and we're on</p> <p>2 several papers together.</p> <p>3 Q Yes, you are.</p> <p>4 A Yeah.</p> <p>5 Q Have you discussed the case with</p> <p>6 Dr. Swisher?</p> <p>7 A Not that I can recall.</p> <p>8 Q Were you aware that she was originally</p> <p>9 disclosed as an expert for the defendants?</p> <p>10 MS. CURRY:</p> <p>11 Object to the form.</p> <p>12 A I think her name did -- was sort of</p> <p>13 mentioned to me, but --</p> <p>14 MS. CURRY:</p> <p>15 And please don't reveal any discussions</p> <p>16 or --</p> <p>17 THE WITNESS:</p> <p>18 Okay.</p> <p>19 MS. CURRY:</p> <p>20 -- communications that you've had with</p> <p>21 lawyers.</p> <p>22 THE WITNESS:</p> <p>23 Yes, counsel.</p> <p>24 MS. THOMPSON:</p>	<p>1 Alabama?</p> <p>2 A No.</p> <p>3 Q Do you know how much money</p> <p>4 Johnson & Johnson has paid to support your lab?</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 A None.</p> <p>8 MS. CURRY:</p> <p>9 We've been going over an hour and a</p> <p>10 half. Whenever it's a good breaking point for</p> <p>11 you.</p> <p>12 MS. THOMPSON:</p> <p>13 I think maybe less than five minutes --</p> <p>14 MS. CURRY:</p> <p>15 No problem.</p> <p>16 MS. THOMPSON:</p> <p>17 -- and it's a great break time.</p> <p>18 A I may be in kidney failure soon.</p> <p>19 MS. THOMPSON:</p> <p>20 Q Can you make five minutes?</p> <p>21 A Yeah, I can. Yeah.</p> <p>22 Q We'll -- we'll --</p> <p>23 A Sure.</p> <p>24 Q -- be in the same boat there, so we</p>

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<p>1 can --</p> <p>2 A Boat's not a good choice.</p> <p>3 Q Yeah. I should have used a different</p> <p>4 word there.</p> <p>5 We talked about the methodology that</p> <p>6 you applied, but -- but it's not included, per</p> <p>7 se, in the report.</p> <p>8 Can you refer to me -- me to any</p> <p>9 published article, textbook chapter, anything</p> <p>10 that actually describes Dr. Birrer's methodology?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A No. Again, I -- I think this relates</p> <p>14 to what a lot of us in the field on my level do</p> <p>15 routinely, and so it's not really defined. But</p> <p>16 when we review literature, a topic, I wouldn't</p> <p>17 want to -- I don't want to call it a</p> <p>18 meta-analysis because that's a formal process.</p> <p>19 But we -- we -- we do the right -- we do the same</p> <p>20 thing. If we do it right, then it's</p> <p>21 comprehensive and then we make opinions on those</p> <p>22 papers. That's the methodology.</p> <p>23 MS. THOMPSON:</p> <p>24 Q Okay.</p>	<p>1 MS. THOMPSON:</p> <p>2 Q How about what is sometimes used in the</p> <p>3 literature, elongated mineral fibers? Does that</p> <p>4 sound familiar?</p> <p>5 A It sounds consistent with some of the</p> <p>6 things I read, but I certainly did not pursue</p> <p>7 that sort of mineralogy review.</p> <p>8 Q So no comprehensive review on what's</p> <p>9 called EMP sometimes.</p> <p>10 MS. CURRY:</p> <p>11 Object to the form.</p> <p>12 A No.</p> <p>13 MS. THOMPSON:</p> <p>14 Q And I can assume that you didn't do a</p> <p>15 comprehensive review on heavy metals --</p> <p>16 A Correct.</p> <p>17 Q -- and ovarian cancer?</p> <p>18 A Yes.</p> <p>19 Q Or fragrance chemicals and ovarian</p> <p>20 cancer?</p> <p>21 A Correct.</p> <p>22 Q Do you agree that scientists can look</p> <p>23 at the same body of literature and reach</p> <p>24 different conclusions, in a general sense?</p>
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<p>1 A It's more of a scientific lab-based</p> <p>2 approach.</p> <p>3 Q Okay. And did you apply the same</p> <p>4 standards for this report that you would use if</p> <p>5 you were publishing a paper, for example, a</p> <p>6 review article like we discussed before?</p> <p>7 A I think so, yes.</p> <p>8 Q Would you be willing to have the</p> <p>9 opinions that you've provided in this report</p> <p>10 peer-reviewed if that were appropriate?</p> <p>11 A Essentially, yes. Yeah. Yeah.</p> <p>12 Q And I think we've discussed this, but</p> <p>13 does -- in your opinion, you performed a</p> <p>14 comprehensive literature review on the subject of</p> <p>15 talc and ovarian cancer; correct?</p> <p>16 A Correct.</p> <p>17 Q But am I correct to say that you did</p> <p>18 not perform the same comprehensive literature</p> <p>19 review for asbestos and ovarian cancer?</p> <p>20 A Correct.</p> <p>21 Q Fibrous talc in ovarian cancer?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A Didn't use that term.</p>	<p>1 A You know, again, I think if the body</p> <p>2 of -- of data and literature is substantive and</p> <p>3 clear, I think that a reasonable scientist, a</p> <p>4 competent scientist will come to the same</p> <p>5 conclusion.</p> <p>6 Q So is it your opinion that a scientist</p> <p>7 who looks at the baby powder literature or talcum</p> <p>8 powder literature and concludes something</p> <p>9 different from you is unreasonable and</p> <p>10 incompetent?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A I -- I would say they got it wrong.</p> <p>14 MS. THOMPSON:</p> <p>15 Q They got it wrong. But what about</p> <p>16 unreasonable?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A I don't -- I wouldn't use that term. I</p> <p>20 would say that they looked at the data and</p> <p>21 misinterpreted it.</p> <p>22 MS. THOMPSON:</p> <p>23 Q And would you say the same about their</p> <p>24 competence?</p>

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<p>1 MS. CURRY: 2 Object to the form. 3 A I think -- you know, labeling that as 4 incompetent is not appropriate. 5 MS. THOMPSON: 6 Q Well, you said, I think that a 7 reasonable scientist, competent scientist will 8 come to the same conclusion. Wouldn't that imply 9 that if they come to a different inclusion -- 10 conclusion, that they're unreasonable or 11 incompetent? 12 A Well, I think I prefaced that with if 13 the body of science we're looking at is -- is -- 14 it's convincing and strong and reproducible, that 15 reasonable scientists will come to the same 16 conclusion. 17 When the data is really unconvincing, 18 which is what we're dealing with here -- this 19 data is not convincing -- there's no data for 20 talc being involved in ovarian cancer, then you 21 get this disparate opinions. And -- and they've 22 got it wrong. And I made the -- 23 Q They've got it -- sorry. 24 A And I've made the argument why I got it</p>	<p>1 A Okay. 2 MS. CURRY: 3 Can we take a break? 4 A It looks like you're coming to an end. 5 MS. THOMPSON: 6 Q We are. Well, not the end of the day. 7 The end of the section. 8 A Hope springs eternal. 9 Q Wishful thinking. 10 One -- one more question, then we're 11 done. 12 A Sure. 13 Q What does "proof" mean to you? 14 MS. CURRY: 15 Object to the form. 16 MS. THOMPSON: 17 Q In a scientific sense. 18 A That would be evidence to support the 19 conclusion. 20 Q To convincingly support the conclusion? 21 MS. CURRY: 22 Object to the form. 23 A I'm not sure I need that adjective 24 there.</p>
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<p>1 right. 2 Q Okay. They've got it wrong? 3 A Uh-huh. 4 Q You have it right. 5 A Uh-huh. 6 Q But I'm trying to find -- figure out 7 how you think they got it wrong. Were they 8 misinformed? 9 MS. CURRY: 10 Object to the form. 11 A They misinterpreted the data. 12 MS. THOMPSON: 13 Q They misinterpreted the data. 14 A Yeah. 15 Q And you would say they misinterpreted 16 the data even though they interpreted the data in 17 the same way that the authors presenting the data 18 pre- -- interpreted it? 19 MS. CURRY: 20 Object to the form. 21 A We'd have to go through the actual 22 paper you're referring to. 23 MS. THOMPSON: 24 Q Okay. We may go through some of those.</p>	<p>1 MS. THOMPSON: 2 Q Well, support -- support equals proof? 3 A Support couldn't equal proof. Proof is 4 a general term. So it's gonna be a spectrum. 5 Q 100 percent? 6 A Are you -- you know, definitive proof 7 would be definitive. 8 Q Okay. Let's take a break. 9 VIDEOGRAPHER: 10 Off the record at 10:44 a.m. 11 (OFF THE RECORD.) 12 VIDEOGRAPHER: 13 We're back on the record at 11 a.m. 14 MS. THOMPSON: 15 Q Dr. Birrer, I want to give you a series 16 of statements and have you agree or disagree or, 17 if you don't know or don't have an opinion, 18 that's fine, too. And -- and if you do have a 19 comment or explanation, you're welcome to provide 20 that, too, after you -- do you have a pen? You 21 can mark on this exhibit as we go through. This 22 is Exhibit 9. 23 (DEPOSITION EXHIBIT NUMBER 9 24 WAS MARKED FOR IDENTIFICATION.)</p>

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<p>1 MS. CURRY: 2 Can I just state an objection on the 3 record to the creation of this exhibit without 4 knowing the background of where the statements 5 are coming from. 6 MS. GARBER: 7 I don't think we're going to have 8 speaking objections here today, Miss Curry. The 9 proper objection is "Objection. Form." Do not 10 coach the witness, please. 11 MS. CURRY: 12 Miss Garber, I'm not coaching the 13 witness. 14 MS. GARBER: 15 You are coaching the witness. You know 16 you're coaching the witness. 17 MS. THOMPSON: 18 I'm asking a statement. It doesn't 19 matter where it's coming from. It's from my 20 head. 21 MR. MIZGALA: 22 Do you have extra copies of this? 23 MS. THOMPSON: 24 I did bring extra copies.</p>	<p>1 A Yeah. I would disagree with that 2 statement. 3 Q Number 2, "If 40 percent of women use 4 talc and the relative risk is 1.2, then 7 percent 5 of ovarian cancer cases would be attributable to 6 talc use or 1,577 cases a year in the USA. This 7 is not a trivial number and should not be 8 dismissed." 9 Would you agree or disagree? 10 MS. CURRY: 11 Object to the form. 12 A Disagree. 13 MS. THOMPSON: 14 Q Number 3, "Genital powder use is a 15 modifiable exposure associated with small to 16 moderate increases in risk of most histologic 17 subtypes of epithelial ovarian cancer." 18 Would you agree or disagree? 19 MS. CURRY: 20 Object to the form. 21 A Disagree. 22 I'm sorry. Go ahead. Got it? 23 Disagree. 24 MS. THOMPSON:</p>
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<p>1 MR. MIZGALA: 2 Thank you. 3 MS. THOMPSON: 4 Q So, Dr. Birrer, statement number 1, 5 "Given the number of hazard ratios reported in 6 the literature between 1.1 and" -- that should be 7 an -- "1.4 in both case-control and cohort 8 studies, it is disingenuous to state that there 9 is no evidence that talc is associated with 10 ovarian cancer." 11 Do you agree or disagree with that 12 statement? 13 MS. CURRY: 14 Object to the form. 15 A Now, you want me to write an answer 16 here? 17 MS. THOMPSON: 18 Q Yes, please. And then -- and when you 19 tell me, I'm going to put it on here, too. 20 A Yeah. Okay. In these -- the hazard 21 ratios, these are in a case-controlled cohort 22 studies. 23 Q It says in both case-controlled and 24 cohort studies.</p>	<p>1 Q Number 4, "Perineal use of talc-based, 2 not asbestiform, body powder is possibly 3 carcinogenic to humans, group 2B." 4 A Disagree. 5 MS. CURRY: 6 Object to the form. 7 MS. THOMPSON: 8 Q Number 5, "The use of perineal talcum 9 powder has been associated with a 20 to 30 10 percent increased risk of ovarian cancer, 11 although it also has been shown to vary by 12 histologic subtype." 13 MS. CURRY: 14 Object to the form. 15 MS. THOMPSON: 16 Q Agree or disagree? 17 A And this is -- like, histologic -- 18 clear cell and endometrioid? Is that what's 19 being implied here? 20 Q Yes. 21 A Disagree. 22 Q Number 6, "A lot of work has been done 23 to clarify the risk reduction of various 24 lifestyle approaches, such as alcohol, obesity,</p>

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<p>1 cigarette smoking and talc use. Some of these</p> <p>2 are subtype specific, such as endometriosis,</p> <p>3 cigarette smoking, while others are general risk</p> <p>4 factors. Use of talc in the genital area has</p> <p>5 consistently been shown to increase the risk of</p> <p>6 OC and therefore is not recommended."</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A Disagree.</p> <p>10 MS. THOMPSON:</p> <p>11 Q Number 7, "Inflammatory risk factors</p> <p>12 for EOC are perineal talc exposure, endometriosis</p> <p>13 and pelvic inflammatory disease."</p> <p>14 Agree or disagree?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A So this is inclusive of all three;</p> <p>18 right? Endometriosis and --</p> <p>19 MS. THOMPSON:</p> <p>20 Q Yes.</p> <p>21 A Okay.</p> <p>22 Q But if you want to disagree and</p> <p>23 explain, that -- that's fine.</p> <p>24 A I would -- that's a tough one to</p>	<p>1 statement as a whole --</p> <p>2 A Yeah.</p> <p>3 Q -- but would --</p> <p>4 A Caveat.</p> <p>5 Q -- and that will be on the record that</p> <p>6 you --</p> <p>7 A Okay. Parsed it.</p> <p>8 Q The ones that -- yeah.</p> <p>9 Number 9, "Talc powder use is highly</p> <p>10 prevalent in the African-American community and</p> <p>11 has been found to be associated with increased</p> <p>12 risk of ovarian cancer, period."</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A So I do believe the first part, that</p> <p>16 it's prevalent in the African-American community.</p> <p>17 The second part is not convincing to me.</p> <p>18 Is that -- can we put that on the</p> <p>19 record? Disagree with the caveat, yeah.</p> <p>20 MS. THOMPSON:</p> <p>21 Q Yeah. "Most women report using</p> <p>22 Johnson's baby powder or Shower to Shower."</p> <p>23 A I don't know.</p> <p>24 Q "The average age women begin using talc</p>
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<p>1 answer. I think endometriosis is a -- I don't</p> <p>2 call it inflammatory. So, yeah, I would -- I</p> <p>3 don't call it inflammatory, so, yeah, I would</p> <p>4 disagree on this. It's too general.</p> <p>5 MS. THOMPSON:</p> <p>6 Q "Risk factors to be considered:</p> <p>7 Parity, oral contraceptive use, breastfeeding,</p> <p>8 tubal ligation, painful periods or endometriosis,</p> <p>9 obesity or polycystic ovarian syndrome, and talc</p> <p>10 use. These risk factors are concordant with</p> <p>11 published epidemiologic data related to</p> <p>12 reproductive factors, use of talc, tubal</p> <p>13 ligation, endometriosis and polycystic ovarian</p> <p>14 syndrome or obesity."</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A So parity, oral contraceptive,</p> <p>18 breastfeeding, tubal ligation, endometriosis but</p> <p>19 not painful periods or obesity or talc use. Is</p> <p>20 that a --</p> <p>21 MS. THOMPSON:</p> <p>22 Q Okay.</p> <p>23 A -- no or --</p> <p>24 Q So -- so you would disagree with the</p>	<p>1 is 20."</p> <p>2 A Don't know that.</p> <p>3 Q "In the interest of public health, I</p> <p>4 believe we should caution women against using</p> <p>5 genital talcum powder," number 12.</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 MS. THOMPSON:</p> <p>9 Q Agree or disagree?</p> <p>10 A I disagree.</p> <p>11 Q Number 13, "Genital powder use is a</p> <p>12 lifestyle risk factor for all serous,</p> <p>13 endometrioid, and clear cell histologic subtypes</p> <p>14 of ovarian cancer."</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A I disagree.</p> <p>18 MS. THOMPSON:</p> <p>19 Q Number 14, "Overall, there is an</p> <p>20 association between genital talc use and EOC and</p> <p>21 a significant trend with increasing" -- in</p> <p>22 quotations -- "talc years of use."</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>

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<p>1 MS. THOMPSON: 2 Q Agree or disagree? 3 A I'm thinking. Disagree. 4 Q Number 15, "Talc-containing powders are 5 hypothesized to promote cancer development by 6 ascending the female genital tract and 7 interacting directly with the ovarian surface 8 epithelium, leading to local inflammation 9 characterized by increased rates of cell 10 division, DNA repair, oxidative stress, and 11 elevated inflammatory cytokines." 12 MS. CURRY: 13 Object to the form. 14 A This is a hypothesis; right? 15 MS. THOMPSON: 16 Q Yes. 17 A I agree. 18 Q "Following" -- number 16. 19 A Uh-huh. 20 Q "Following perineal application, talc 21 particles can migrate from the vagina to the 22 peritoneal cavity and ovaries." 23 MS. CURRY: 24 Object to the form.</p>	<p>1 present in the vagina, can migrate to the upper 2 genital tract." 3 MS. CURRY: 4 Object to the form. 5 MS. THOMPSON: 6 Q Agree or disagree? 7 MS. THOMPSON: 8 A You want to -- do you want to define 9 "biologic credibility"? 10 THE COURT REPORTER: 11 Say again? 12 THE WITNESS: 13 Define "biologic credibility." 14 Sorry. I'm mumbling. 15 THE COURT REPORTER: 16 Uh-huh. 17 MS. THOMPSON: 18 Q Let's define it as evidence of a 19 credible biologic mechanism. 20 A I would disagree. 21 MS. CURRY: 22 Object to the form. 23 MS. THOMPSON: 24 Q Number 20, "The vagina serves as a</p>
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<p>1 A Disagree on that. 2 MS. THOMPSON: 3 Q Number 17, "A majority of women 4 experience retrograde menstruation. This 5 suggests a mechanism by which talc particles can 6 travel through the female reproductive tract to 7 the peritoneal cavity and ovaries." 8 MS. CURRY: 9 Object to the form. 10 MS. THOMPSON: 11 Q Agree or disagree? 12 A Disagree. 13 Q Number 18, "It is possible that the 14 passage of talc is aided by retrograde menses and 15 that talc use during menses poses a special 16 risk." 17 Agree or disagree? 18 MS. CURRY: 19 Object to the form. 20 A Disagree. 21 MS. THOMPSON: 22 Q 19, "Biologic credibility of the 23 Talc/EOC association is enhanced by persuasive 24 evidence that inert particles the size of talc,</p>	<p>1 portal to the internal reproductive tract. 2 MS. CURRY: 3 Object to the form. 4 A Agree. 5 MS. THOMPSON: 6 Q 21, "The vagina is a musculoepithelial 7 tube extending from the level of the external 8 genitals to the cervical portion of the uterus. 9 It is a reproductive conduit in all respects, 10 connecting the external environment to the 11 internal genitalia." 12 MS. CURRY: 13 Object to the form. 14 A I'm not sure I understand that 15 statement. 16 What's the internal genitalia? 17 MS. THOMPSON: 18 Q The ovaries. 19 A The ovaries. I'm putting that in here. 20 Q And tubes. Let's say tubes and 21 ovaries. 22 A Okay. External. 23 Yeah, I would agree on that. 24 Q And, actually, I think the --</p>

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<p>1 A Cervix.</p> <p>2 Q I think the uterus is an internal</p> <p>3 genitalia, too.</p> <p>4 A Okay.</p> <p>5 Q But I agree that's somewhat --</p> <p>6 A Yeah. It's a little -- I mean, yeah.</p> <p>7 Genitalia is usually external.</p> <p>8 Q Yeah.</p> <p>9 22, "A review of the literature</p> <p>10 suggests that it is biologically plausible for</p> <p>11 talc particles to migrate from the vagina to the</p> <p>12 peritoneal cavity and ovaries following perineal</p> <p>13 application."</p> <p>14 MS. CURRY:</p> <p>15 Object to the form.</p> <p>16 MS. THOMPSON:</p> <p>17 Q Agree or disagree?</p> <p>18 A Disagree.</p> <p>19 Q "Talc" -- 23. "Talc placed on the</p> <p>20 perineum may enter the vagina and ascend to the</p> <p>21 upper genital tract."</p> <p>22 Agree or disagree?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>	<p>1 A Disagree.</p> <p>2 MS. THOMPSON:</p> <p>3 Q 27, "Talc is able to migrate through</p> <p>4 the genital tract and gain access to the ovaries</p> <p>5 because talc fibers have been detected in benign</p> <p>6 and malignant ovarian tissues."</p> <p>7 Agree or disagree?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A Disagree.</p> <p>11 MS. THOMPSON:</p> <p>12 Q 28, "There are inherent limitations</p> <p>13 quantifying a dose-response due to a lack of</p> <p>14 metrics for how much talc is in an application,</p> <p>15 how much enters the vagina, and how much reaches</p> <p>16 the upper genital tract where, presumably, any</p> <p>17 deleterious effect is mediated. This may account</p> <p>18 for the failure to identify a dose-response in</p> <p>19 many papers on talc and ovarian cancer."</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A It's a big statement. Give me a</p> <p>23 second. I disagree with that.</p> <p>24 MS. THOMPSON:</p>
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<p>1 A Disagree.</p> <p>2 MS. THOMPSON:</p> <p>3 Q 24, "The potential for particulates to</p> <p>4 migrate from the perineum and vagina to the</p> <p>5 peritoneal cavity is indisputable."</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 A Disagree.</p> <p>9 MS. THOMPSON:</p> <p>10 Q "The Sjösten study" --</p> <p>11 Do you know the Sjösten study?</p> <p>12 A I do.</p> <p>13 Q -- "offers compelling evidence in</p> <p>14 support of the migration hypothesis."</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A Disagree.</p> <p>18 MS. THOMPSON:</p> <p>19 Q 26, "Talc particulates from perineal</p> <p>20 application have been shown to migrate to the</p> <p>21 ovaries."</p> <p>22 Agree or disagree?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>	<p>1 Q 29, "Tubal ligation is a strong</p> <p>2 protective factor. One possibility for the</p> <p>3 mechanism is blocking the transience of potential</p> <p>4 materials that could impact the health of the</p> <p>5 fimbria."</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 A Disagree.</p> <p>9 MS. THOMPSON:</p> <p>10 Q Number 30, "Any material -- whether it</p> <p>11 be talc, heavy metals, asbestos, whatever -- can</p> <p>12 migrate from the perineum to the ovaries through</p> <p>13 the reproductive tract. There's an anatomical</p> <p>14 conduit, so it's not blocked. Theoretically, it</p> <p>15 could happen."</p> <p>16 Agree or disagree?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A Disagree.</p> <p>20 MS. THOMPSON:</p> <p>21 Q 31, "There is an anatomic conduit from</p> <p>22 the perineum through to the ovary, vagina,</p> <p>23 cervical os, endometrium, and the fallopian tube</p> <p>24 that is, in most women, an open conduit -- that</p>

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<p>1 is in most women an open conduit. On a theoretic 2 level, things can transit." 3 A I would agree with that. 4 MS. CURRY: 5 Object to the form. Sorry. 6 THE WITNESS: 7 I'm sorry. 8 MS. THOMPSON: 9 Q 32, "Genital powder use was associated 10 with ovarian cancer risk in African-American 11 women and are consistent with localized chronic 12 inflammation in the ovary due to particulates 13 that travel through a direct transvaginal route." 14 MS. CURRY: 15 Object to the form. 16 A Disagree. 17 MS. THOMPSON: 18 Q 33, "Biologic credibility for an 19 association would be strengthened by an animal 20 model, but an experiment capturing all of the 21 potential factors in the 'human' model would be 22 very difficult. These elements include 23 chronicity of the exposure, anatomic and 24 physiologic uniqueness of women, effects of</p>	<p>1 Oh, sorry. 2 So the animal model, yes. The rest of 3 it, no. 4 Q Animal model -- 5 A Would be strengthened. 6 Q Okay. We've got in the human model -- 7 A Yeah. 8 Q -- agree. 9 A Okay. 10 Q Okay. And the rest, disagree. 11 A Yeah. 12 Q Okay. I think that's clear, especially 13 with explanation. 14 34, "It is plausible that perineal 15 talc, and other particulate, in parens, that 16 reaches the endometrial cavity, fallopian tubes, 17 ovaries and peritoneum, may elicit a foreign 18 body-type reaction and inflammatory response 19 that, in some exposed women, may progress to 20 epithelial cancers." 21 MS. CURRY: 22 Object to the form. 23 A I disagree with that. 24 MS. THOMPSON:</p>
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<p>1 pregnancy and potential spread through coitus." 2 Agree or disagree? 3 MS. CURRY: 4 Object to the form. 5 A This is in relationship to talc? 6 MS. THOMPSON: 7 Q Yes. 8 A Okay. 9 Q Talc and ovarian cancer. 10 A Yeah, yeah. Okay. 11 It's a two-part issue, unfortunately. 12 I mean, I think it would be strengthened by an 13 animal model. 14 Q And if you -- if you'd -- if you'd like 15 to divide that up into two sections, that would 16 be -- that's fine. 17 A Okay. Well, I -- okay. That's -- 18 yeah. I think -- I think it would be 19 strengthened by an animal model. 20 Q Okay. So -- 21 A "Experiment capturing all the potential 22 would be difficult." 23 I don't agree with that, the second 24 part. Can I do that and split it a little bit?</p>	<p>1 Q 35, "Epidemiologic evidence implicates 2 chronic inflammation as a central mechanism in 3 the pathogenesis of ovarian cancer, the most 4 lethal gynecologic cancer among women in the 5 United States." 6 MS. CURRY: 7 Object to the form. 8 MS. THOMPSON: 9 Q And I'll assume that you don't agree 10 with the last -- 11 A Right. Most lethal? 12 Q -- part of that? But the first part? 13 A I would disagree with this. Yeah. 14 Q 36, "Findings on talc and endometriosis 15 are consistent with previous findings and are 16 compatible with a hypothesis that these factors 17 increase the risk of ovarian cancer and that 18 inflammation -- and that inflammation may be a 19 common pathway." 20 MS. CURRY: 21 Object to the form. 22 A Disagree. 23 MS. THOMPSON: 24 Q 37, "Chron-" --</p>

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<p>1 A 37. Right.</p> <p>2 Q "Chronic inflammation has been proposed</p> <p>3 as the possible causal mechanism that explains</p> <p>4 the observed association between certain risk</p> <p>5 factors, such as use of talcum powder (talc) in</p> <p>6 the pelvic region and epithelial ovarian cancer."</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A That's been proposed; right? I would</p> <p>10 agree.</p> <p>11 MS. THOMPSON:</p> <p>12 Q And you would disagree that that is a</p> <p>13 possible cause of mechanism, I assume.</p> <p>14 A Correct.</p> <p>15 Q 38, "Talc particles can induce an</p> <p>16 inflammatory response in vivo, which may be</p> <p>17 important in ovarian cancer risk. Normal ovarian</p> <p>18 cells treated with talc are more likely to</p> <p>19 undergo cell proliferation and neoplastic</p> <p>20 transformation, and cellular generation of</p> <p>21 reactive oxygen species increases with increasing</p> <p>22 exposure to talc."</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>	<p>1 inflammation and an increased risk of ovarian</p> <p>2 cancer. Other specific inflammatory factors have</p> <p>3 also been associated with ovarian cancer."</p> <p>4 MS. CURRY:</p> <p>5 Object to the form.</p> <p>6 A I agree on that.</p> <p>7 MS. THOMPSON:</p> <p>8 Q 42, "The patency of the female tract</p> <p>9 and the nature of ovarian cancer as a surface</p> <p>10 epithelial (mesothelial lesion) make the ovary a</p> <p>11 target for foreign body carcinogenesis."</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 MS. THOMPSON:</p> <p>15 Q Agree or disagree?</p> <p>16 A Disagree.</p> <p>17 Q 43, "Inflammation has been suggested to</p> <p>18 be a major factor leading to epithelial ovarian</p> <p>19 cancer. For example, epidemiologic data have</p> <p>20 shown that asbestos and talc exposure increased</p> <p>21 ovarian cancer risk."</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A Disagree.</p>
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<p>1 A I disagree with that.</p> <p>2 MS. THOMPSON:</p> <p>3 Q 39, "A growing body of epidemiologic</p> <p>4 evidence suggests that factors causing epithelial</p> <p>5 inflammation are involved in ovarian</p> <p>6 carcinogenesis. Such factors include asbestos</p> <p>7 and talc exposures, endometriosis and pelvic</p> <p>8 inflammatory disease (PID)."</p> <p>9 MS. CURRY:</p> <p>10 Object to the form.</p> <p>11 A Disagree with that.</p> <p>12 MS. THOMPSON:</p> <p>13 Q 40, "Direct induction of inflammation</p> <p>14 as a result of endometriosis, talc, and asbestos</p> <p>15 exposure, and PID, as well as ovulation itself,</p> <p>16 may act to promote ovarian tumorigenesis."</p> <p>17 Agree or disagree?</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A Disagree.</p> <p>21 MS. THOMPSON:</p> <p>22 Q 41, regarding Inflammation. "Studies</p> <p>23 of the inflammatory marker C-reactive protein</p> <p>24 suggests a possible association between</p>	<p>1 MS. THOMPSON:</p> <p>2 Q 44, "Studies have found" -- "also found</p> <p>3 that endometrio-" --</p> <p>4 Let's leave out the "also," since I</p> <p>5 don't know what that refers to.</p> <p>6 "Studies have found that endometriosis,</p> <p>7 pelvic inflammatory disease, and mumps viral</p> <p>8 infection are positively associated with ovarian</p> <p>9 cancer risk. In contrast, tubal ligations and</p> <p>10 hysterectomies, which are thought to reduce the</p> <p>11 exposure of the OSE to environmental inflammation</p> <p>12 initiators have been shown to reduce the risk of</p> <p>13 ovarian cancer."</p> <p>14 MS. CURRY:</p> <p>15 Object to the form.</p> <p>16 A I agree on that.</p> <p>17 MS. THOMPSON:</p> <p>18 Q 45, "It has been noted that the</p> <p>19 ovulatory process itself resembles an</p> <p>20 inflammatory reaction, with leukocytic</p> <p>21 infiltration, the release of nitric oxide and</p> <p>22 inflammatory cytokines, basal dilation, DNA</p> <p>23 repair and tissue remodeling."</p> <p>24 MS. CURRY:</p>

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<p>1 Object to the form.</p> <p>2 MS THOMPSON:</p> <p>3 Q Agree or disagree?</p> <p>4 A I would agree on that.</p> <p>5 Q 46, "The latency period of more</p> <p>6 advanced, malignant epithelial ovarian cancer</p> <p>7 could be estimated to be approximately 30 to 40</p> <p>8 years."</p> <p>9 MS. CURRY:</p> <p>10 Form.</p> <p>11 A I don't know that. Sorry. I don't</p> <p>12 know.</p> <p>13 MS. THOMPSON:</p> <p>14 Q "If the magnitude of the association is</p> <p>15 to be estimated with precision, it is important</p> <p>16 that consortia are developed and expanded in</p> <p>17 order to generate the appropriate sample size."</p> <p>18 And this is in regard to talcum powder</p> <p>19 in association with ovarian cancer.</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A Don't know.</p> <p>23 MS. THOMPSON:</p> <p>24 Q 48, "Neither prospective study" --</p>	<p>1 Q 51, "For baby powder users, it is habit</p> <p>2 that developed at one point and stays regularly."</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A Don't know.</p> <p>6 MS. THOMPSON:</p> <p>7 Q 52, "In order to achieve statistical</p> <p>8 significance in a prospective study, we need a</p> <p>9 much larger cohort. For example, we will need to</p> <p>10 study upwards of 200,000 women for ten years."</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A I disagree.</p> <p>14 MS. THOMPSON:</p> <p>15 Q You disagree.</p> <p>16 53, "Given inherent limitation of</p> <p>17 cohort studies, it is not surprising that we have</p> <p>18 not been able to confirm the case-control studies</p> <p>19 with prospective studies, but this does not mean</p> <p>20 that the case-control studies were wrong."</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A Disagree.</p> <p>24 MS. THOMPSON:</p>
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<p>1 meaning Gertig or Houghton -- "confirmed the</p> <p>2 association of talc use and ovarian cancer raised</p> <p>3 by the case-control studies, but neither study</p> <p>4 was powered to detect a risk of 1.2 and</p> <p>5 therefore, we cannot exclude the possibility."</p> <p>6 Agree or disagree?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A Disagree.</p> <p>10 MS. THOMPSON:</p> <p>11 Q 49, "An odds ratio of 1.2 or 1.3 has no</p> <p>12 meaningful clinical impact on a patient."</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A Don't know.</p> <p>16 MS. THOMPSON:</p> <p>17 Q "There are design studies with" --</p> <p>18 sorry.</p> <p>19 50, "There are design issues with every</p> <p>20 study, both case-controls and cohort studies."</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A I would agree with that.</p> <p>24 MS. THOMPSON:</p>	<p>1 Q Agree or disagree?</p> <p>2 A Disagree.</p> <p>3 Q 54, "It is unlikely that the</p> <p>4 association between talc and ovarian cancer is</p> <p>5 due to confounding, and so it is fair to say that</p> <p>6 if there is a statistically robust relationship</p> <p>7 between talc use and ovarian cancer" -- sorry.</p> <p>8 I'm gonna start all over.</p> <p>9 "It is unlikely that the association</p> <p>10 between talc and ovarian cancer is due to</p> <p>11 confounding, and so it is fair to say that if</p> <p>12 there is a statistically robust relationship</p> <p>13 between talc use and ovarian cancer, it is likely</p> <p>14 to be causal (albeit with intermediate factors</p> <p>15 such as inflammation)."</p> <p>16 Agree or disagree?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A Disagree.</p> <p>20 MS. THOMPSON:</p> <p>21 Q 55, "Among many epidemiologic</p> <p>22 variables, no confounders for the association --</p> <p>23 for the association were identified."</p> <p>24 MS. CURRY:</p>

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<p>1 Object to the form.</p> <p>2 A No opinion.</p> <p>3 MS. THOMPSON:</p> <p>4 Q 56, "There is a consistent association</p> <p>5 between talc and ovarian cancer that appears</p> <p>6 unlikely to be explained by recall or</p> <p>7 confounding."</p> <p>8 Agree or disagree?</p> <p>9 MS. CURRY:</p> <p>10 Object to the form.</p> <p>11 A Disagree.</p> <p>12 MS. THOMPSON:</p> <p>13 Q 57, "The meta-analyses of the available</p> <p>14 human studies in the peer-reviewed literature</p> <p>15 indicate a consistent and statistically</p> <p>16 significant positive association between perineal</p> <p>17 exposure to talc and ovarian cancer."</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A Disagree.</p> <p>21 MS. THOMPSON:</p> <p>22 Q You disagree.</p> <p>23 58, "In studies where the exposure is</p> <p>24 simple (e.g., never versus ever use), recall bias</p>	<p>1 Object to the form.</p> <p>2 A I agree on that.</p> <p>3 MS. THOMPSON:</p> <p>4 Q 61, "The gold standard for translating</p> <p>5 epidemiologic case-controlled or cohort</p> <p>6 observational studies into a clinical meaningful</p> <p>7 data relies on laboratory-derived experiments in</p> <p>8 vitro or in vivo."</p> <p>9 MS. CURRY:</p> <p>10 Object to the form.</p> <p>11 A I disagree with that.</p> <p>12 MS. THOMPSON:</p> <p>13 Q On what basis?</p> <p>14 A The -- it depends upon the</p> <p>15 epidemiologic date that that we're talking about.</p> <p>16 Q In other words, if the epidemiologic</p> <p>17 data isn't strong enough, in your opinion, then</p> <p>18 doing in vitro or in vivo studies don't provide</p> <p>19 clinically meaningful data? Is that --</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A It's actually -- it's actually the</p> <p>23 other way around. So I think if it's a weak</p> <p>24 association, then the laboratory data becomes</p>
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<p>1 is unlikely to be an important source of bias."</p> <p>2 Agree or disagree?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A No opinion.</p> <p>6 MS. THOMPSON:</p> <p>7 Q Is that an issue that you would be</p> <p>8 inclined to -- to ask an epidemiologist?</p> <p>9 MS. CURRY:</p> <p>10 Object to the form.</p> <p>11 A I'd like to see the -- I'd like to see</p> <p>12 the study that it's based on.</p> <p>13 MS. THOMPSON:</p> <p>14 Q Okay. 59, "Available data are</p> <p>15 indicative of a causal effect." And again,</p> <p>16 referring to talc and ovarian cancer.</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A Disagree.</p> <p>20 MS. THOMPSON:</p> <p>21 Q 60, "The data supporting the</p> <p>22 association of talc to the development of ovarian</p> <p>23 cancer is completely inconclusive."</p> <p>24 MS. CURRY:</p>	<p>1 that much more important for biologic</p> <p>2 plausibility.</p> <p>3 If it has -- you know, if it's chimney</p> <p>4 sweeps or lung cancer with smoking, then that's</p> <p>5 clinically meaningful. Those effects are huge.</p> <p>6 That's what I'm -- I'm not associating this just</p> <p>7 with the talc statement. Is it a talc statement?</p> <p>8 MS. THOMPSON:</p> <p>9 Q Uh-huh. I just want to make -- just</p> <p>10 want to make sure that I understand the -- the</p> <p>11 reason for your disagreement. But if you feel</p> <p>12 like it's explained, I'm good.</p> <p>13 A And again, I -- it's sort of the broad</p> <p>14 view that if -- if the -- if the epidemiologic</p> <p>15 case control and cohort studies are so powerful</p> <p>16 with a huge effect, then the biologic experiments</p> <p>17 and lab become less important.</p> <p>18 The other way around, which is really</p> <p>19 what we're dealing with with talc where the</p> <p>20 epidemiologic data I think is not compelling, the</p> <p>21 biologic plausibility becomes more important.</p> <p>22 And it sort of gets back into the Bradford Hill.</p> <p>23 Q Okay. So it's sort of inversely</p> <p>24 proportional in terms of the --</p>

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<p>1 A In terms of value.</p> <p>2 Q -- the importance of it?</p> <p>3 A Yeah.</p> <p>4 Q Okay. Got it.</p> <p>5 62, "Mineral talc occurs naturally in a</p> <p>6 platy, flat form, but may also occur as</p> <p>7 asbestiform fibers, which describes its physical</p> <p>8 form and does not imply the presence of asbestos.</p> <p>9 The purer forms, approximately 90 percent mineral</p> <p>10 talc, are used for" -- oops -- "are used for</p> <p>11 cosmetic and hygiene products, including baby</p> <p>12 powders and feminine hygiene products."</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 MS. THOMPSON:</p> <p>16 Q Agree or disagree or no opinion?</p> <p>17 A No opinion.</p> <p>18 Q That's it. I'll think of some new</p> <p>19 questions.</p> <p>20 A I feel like I just took my boards.</p> <p>21 Q Dr. Birrer, how do you define a</p> <p>22 carcinogen?</p> <p>23 A That's an agent or substance which</p> <p>24 causes or induces cancer.</p>	<p>1 Q Are you familiar with the term -- and I</p> <p>2 believe this is more in the toxicological</p> <p>3 literature -- of a complete carcinogen?</p> <p>4 A I would --</p> <p>5 Q Does that have a meaning to you?</p> <p>6 A Yeah. I've seen that described.</p> <p>7 Frankly, I can only -- I can only sort of guess</p> <p>8 what they mean by that. My guess is a complete</p> <p>9 carcinogen, putting out there for the discussion</p> <p>10 between you and me is what I'm describing as the</p> <p>11 classic initiation molecule.</p> <p>12 Q IARC describes -- do I have it? Would</p> <p>13 you look at Exhibit 6, which is the IARC? I just</p> <p>14 wanted to look at their definition of</p> <p>15 carcinogenesis and see whether you would agree</p> <p>16 with it or not.</p> <p>17 A Is it in the preamble?</p> <p>18 Q It's in the preamble. And if I can't</p> <p>19 find it, we may come back to that later.</p> <p>20 Because I can't remember where it is.</p> <p>21 Let's come back to that.</p> <p>22 A It's a big preamble.</p> <p>23 Q Lots of methodology.</p> <p>24 Are you familiar with the Hanahan paper</p>
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<p>1 Q Do you include effect on the promotion</p> <p>2 and progression of cancer as well in a -- when</p> <p>3 you're considering carcinogenicity?</p> <p>4 MS. CURRY:</p> <p>5 Object to the form.</p> <p>6 A So historically -- and there's been a</p> <p>7 lot of work on this for decades -- carcinogens</p> <p>8 have been -- usually been associated with</p> <p>9 initiation. So this is a substance -- just to</p> <p>10 you an example. Paint it on to a mouse skin, and</p> <p>11 you develop tumors above -- statistically</p> <p>12 significantly above background.</p> <p>13 Tumor promoters don't do that. But</p> <p>14 when you combine the tumor promoter with the</p> <p>15 carcinogen, instead of getting the 10 tumors, now</p> <p>16 you get a hundred. So promotion is a little bit</p> <p>17 different. That's the historic perspective.</p> <p>18 You know, we've come a long way since</p> <p>19 then, and I think it's gotten even more complex,</p> <p>20 that there are tumor promoters that work by</p> <p>21 transcriptional factors. So that's not genetic</p> <p>22 changes in the tumor, in the cells. Carcinogens</p> <p>23 usually work that way, where you're getting a</p> <p>24 permanent genetic change.</p>	<p>1 from 2011 "Hallmarks of Cancer"?</p> <p>2 A It's a global sort of review. Yes.</p> <p>3 Q A big review --</p> <p>4 A Big.</p> <p>5 Q -- article?</p> <p>6 A Is it --</p> <p>7 Q Do you know -- do you know Dr. Hanahan</p> <p>8 or know of Dr. Hanahan?</p> <p>9 A I know of him.</p> <p>10 Q And it's Hanahan and Weinberg?</p> <p>11 A Weinberg, yeah. Yeah.</p> <p>12 Q Let me go ahead and mark that.</p> <p>13 A Okay.</p> <p>14 (DEPOSITION EXHIBIT NUMBER 10</p> <p>15 WAS MARKED FOR IDENTIFICATION.)</p> <p>16 MS. THOMPSON:</p> <p>17 Make sure those don't have my markings</p> <p>18 on it.</p> <p>19 A It would be easier for me if the</p> <p>20 markings were there.</p> <p>21 MS. THOMPSON:</p> <p>22 Q Exhibit 10. And you agree that this</p> <p>23 article describes the hallmarks of cancer in a</p> <p>24 general sense; right?</p>

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<p>1 A Correct.</p> <p>2 Q And it's a review article in Cell. Are</p> <p>3 you familiar with that journal?</p> <p>4 A I am.</p> <p>5 Q Have you published in that journal?</p> <p>6 Probably.</p> <p>7 A I wished I had published more in that</p> <p>8 journal. Yeah.</p> <p>9 Q And it's -- the title of the article is</p> <p>10 "The Hallmarks of Cancer: The Next Generation."</p> <p>11 But in the top right hand, it says, "Leading edge</p> <p>12 review." So that would be a review article for a</p> <p>13 general audience. Would you agree?</p> <p>14 A Yes. General audience of scientists,</p> <p>15 yeah. Because it's pretty sophisticated.</p> <p>16 Q Agree.</p> <p>17 And it describes the hallmarks of</p> <p>18 cancer generally. These do not specifically</p> <p>19 apply to ovarian cancer in -- in the</p> <p>20 introduction. I'm starting on the third</p> <p>21 sentence. "They include sustaining proliferative</p> <p>22 signaling, evading growth suppressors, resisting</p> <p>23 cell death, enabling replicative" --</p> <p>24 A Third line of -- you're in the abstract</p>	<p>1 Characteristics."</p> <p>2 And it says, the first sentence, "An</p> <p>3 increasing body of research suggests that two</p> <p>4 additional hallmarks of cancer are involved in</p> <p>5 the pathogenesis of some and perhaps all</p> <p>6 cancers."</p> <p>7 I'm gonna skip down to the -- to the</p> <p>8 last sentence in that description.</p> <p>9 "Inflammation" --</p> <p>10 A You're in the figure legend?</p> <p>11 Q In the figure legend.</p> <p>12 "Inflammation by innate immune cells</p> <p>13 designed to fight infections and heal wounds can</p> <p>14 instead result in their inadvertent support of</p> <p>15 multiple hallmark capabilities, thereby</p> <p>16 manifesting the now widely appreciated tumor</p> <p>17 promoting consequences of inflammatory</p> <p>18 responses."</p> <p>19 Would you agree with that statement, in</p> <p>20 a general sense?</p> <p>21 A Yes.</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A Sorry.</p>
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<p>1 or in the introduction?</p> <p>2 Q I'm in the -- sorry. I'm in the</p> <p>3 abstract.</p> <p>4 A Okay.</p> <p>5 Q It sort of seemed more like an</p> <p>6 introduction than an abstract to me. So starting</p> <p>7 again. Talking about the hallmarks described in</p> <p>8 this paper, "They include sustaining</p> <p>9 proliferative signalling, evading growth</p> <p>10 suppressors, resisting cell death, enabling</p> <p>11 replicative immortality, enduing angiogenesis,</p> <p>12 and activating invasion and metastasis.</p> <p>13 "Underlining these hallmarks are genome</p> <p>14 instability which generates the genetic diversity</p> <p>15 that expedites their acquisition and</p> <p>16 inflammation, which fosters multiple hallmark</p> <p>17 functions."</p> <p>18 Would you agree with that statement</p> <p>19 from this article?</p> <p>20 A I think as a general statement, yes.</p> <p>21 Q And the article, as you described, is</p> <p>22 quite technical and -- and goes on for a while.</p> <p>23 I'm looking at the Figure 3 on page 658. And the</p> <p>24 heading is "Emerging Hallmarks and Enabling</p>	<p>1 MS. THOMPSON:</p> <p>2 Q Are you familiar with Dr. Balkwill?</p> <p>3 A We're done with this?</p> <p>4 Q We're done with that.</p> <p>5 A Fran? Fran Balkwill? Yes.</p> <p>6 Q And I believe you published with</p> <p>7 Dr. Balkwill?</p> <p>8 A I believe we're on two. I can't</p> <p>9 remember.</p> <p>10 Q And she is a well-renowned cancer</p> <p>11 biologist. Would you agree?</p> <p>12 A I would agree.</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 (DEPOSITION EXHIBIT NUMBER 11</p> <p>16 WAS MARKED FOR IDENTIFICATION.)</p> <p>17 MS. THOMPSON:</p> <p>18 Q I'm gonna mark as Exhibit 11 an article</p> <p>19 written by Dr. Balkwill.</p> <p>20 Have you seen this article, Dr. Birrer?</p> <p>21 A I'm actually not familiar with this.</p> <p>22 But I know Fran's work pretty well.</p> <p>23 Q Okay. Well, let's just --</p> <p>24 A Yeah.</p>

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<p>1 Q -- look through it. And this is also a</p> <p>2 review article.</p> <p>3 A Uh-huh.</p> <p>4 Q And -- and this article is in -- is in</p> <p>5 The Lancet. Correct?</p> <p>6 A Correct.</p> <p>7 Q And is -- we've already mentioned that</p> <p>8 Dr. Balkwill is well regarded.</p> <p>9 Is The Lancet a well-regarded journal?</p> <p>10 A Yes.</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 MS. THOMPSON:</p> <p>14 Q Is it one of the most respected</p> <p>15 journals, would you say?</p> <p>16 MS. CURRY:</p> <p>17 Object to the form.</p> <p>18 A It's not as good as Cell.</p> <p>19 MS. THOMPSON:</p> <p>20 Q Oh. I won't tell them you said that.</p> <p>21 But, generally -- generally speaking --</p> <p>22 A Yes.</p> <p>23 Q -- physicians and scientists would</p> <p>24 recognize The Lancet?</p>	<p>1 progression, and immunosuppression than they are</p> <p>2 to mount an effective host antitumor response.</p> <p>3 Moreover cancer suscep- -- susceptibility and</p> <p>4 severity may be associated with functional</p> <p>5 polymorphisms of inflammatory cytokine genes, and</p> <p>6 deletion or inhibition of inflammatory cytokines,</p> <p>7 inhibits development of experimental cancer.</p> <p>8 "If genetic damage is the 'match that</p> <p>9 lights the fire' of cancer, some types of</p> <p>10 inflammation may provide the 'fuel that feeds the</p> <p>11 flames.'"</p> <p>12 That was a long passage, but do you</p> <p>13 generally agree with the statement by</p> <p>14 Dr. Balkwill?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A I do.</p> <p>18 MS. THOMPSON:</p> <p>19 Q And then look down on that same page to</p> <p>20 panel 1.</p> <p>21 A Uh-huh.</p> <p>22 Q And the title of that panel, for lack</p> <p>23 of better word, is "Some Associations Between</p> <p>24 Inflammation and Cancer Risk." Right?</p>
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<p>1 A It's well read -- it's well read and</p> <p>2 it's -- it has a substantial impact factor.</p> <p>3 Q And we don't know in this situation</p> <p>4 whether Dr. Balkwill -- do you know</p> <p>5 Dr. Mantovani, the second author on this paper?</p> <p>6 A No. I don't recognize him.</p> <p>7 Q We don't know whether this article was</p> <p>8 invited or submitted, but, regardless, certainly</p> <p>9 the readers of Lancet would look to Dr. Balkwill</p> <p>10 as being an expert to discuss inflammation in</p> <p>11 cancer; correct?</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A Correct.</p> <p>15 MS. THOMPSON:</p> <p>16 Q So reading in -- in the abstract, which</p> <p>17 looks like an introduction to me again, but</p> <p>18 reading the abstract, "This article reviews" --</p> <p>19 second line -- "This article reviews the links</p> <p>20 between cancer and inflammation and discusses the</p> <p>21 implications of these links for cancer prevention</p> <p>22 and treatment. We suggest that the inflammatory</p> <p>23 cells and cytokines found in tumors are more</p> <p>24 likely to contribute to tumor growth,</p>	<p>1 A 901. Got it.</p> <p>2 Q And under "Malignancy," it lists</p> <p>3 various types of cancer in which there's</p> <p>4 association between inflammation and cancer risk.</p> <p>5 Correct?</p> <p>6 A Correct.</p> <p>7 Q And one of them -- one of them is</p> <p>8 ovarian; right?</p> <p>9 A I see it.</p> <p>10 Q And in the -- under the inflammatory</p> <p>11 stimulus/condition, it lists pelvic inflammatory</p> <p>12 disease, talc, tissue remodeling.</p> <p>13 Do you agree that Dr. Balkwill, at</p> <p>14 least in 2001, believed that talc was an</p> <p>15 inflammatory stimulus and condition for the</p> <p>16 association with ovarian cancer?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A Yeah. So, again, this is a -- a bit of</p> <p>20 a recurring theme in the sense that I don't know</p> <p>21 if Fran -- I haven't talked to her about this</p> <p>22 review. I don't know if Fran believed that and</p> <p>23 got it wrong or, more likely, this is a review</p> <p>24 article. So you include everything, even though</p>

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<p>1 she may not feel really strongly about that. So</p> <p>2 it's a little hard to tell.</p> <p>3 MS. THOMPSON:</p> <p>4 Q But you would agree that both -- both</p> <p>5 Dr. Balkwill and The Lancet would not include</p> <p>6 something in a review article for which there was</p> <p>7 no evidence?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A Again, it depends on how they're</p> <p>11 proposing it; that there has been -- there has --</p> <p>12 there have been reports associating PID, talc --</p> <p>13 I don't know what tissue remodeling is, although</p> <p>14 that is probably the most reasonable -- but PID</p> <p>15 and talc as associated with a risk for ovarian</p> <p>16 cancer. That's a true statement. I don't -- and</p> <p>17 the reason we're here today is because I reviewed</p> <p>18 that literature and I don't believe the</p> <p>19 conclusion.</p> <p>20 But you could put it into review.</p> <p>21 That's -- that's the nature of a review article.</p> <p>22 We all put things in that we feel the reader</p> <p>23 needs to see to get a full understanding of</p> <p>24 science, but we don't necessarily -- we're not</p>	<p>1 them to say, okay, this has been studied</p> <p>2 epidemiologically and in other situations. So I</p> <p>3 think -- I think that's what you're grappling</p> <p>4 with. It's a review article. So these things</p> <p>5 show up.</p> <p>6 Q Okay. So -- so there are two</p> <p>7 possibilities --</p> <p>8 A Uh-huh.</p> <p>9 Q -- it sounds like. Either Dr. Balkwill</p> <p>10 got it wrong --</p> <p>11 A Uh-huh.</p> <p>12 Q -- or because this was a review</p> <p>13 article, she was reporting evidence that was in</p> <p>14 the literature that she felt that readers of this</p> <p>15 article should be aware of.</p> <p>16 A Correct. Don't tell her I said the</p> <p>17 former.</p> <p>18 MS. CURRY:</p> <p>19 Object to the form of the question.</p> <p>20 MS. THOMPSON:</p> <p>21 Q Okay. I -- I -- I will do that for</p> <p>22 you, Dr. Birrer.</p> <p>23 A Uh-huh.</p> <p>24 Q And -- and this paper is not recent,</p>
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<p>1 convinced.</p> <p>2 MS. THOMPSON:</p> <p>3 Q Well, but -- but back to my question,</p> <p>4 which I think was Dr. Balkwill and The Lancet</p> <p>5 would not have put this in with no evidence.</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 A I don't agree with that.</p> <p>9 MS. THOMPSON:</p> <p>10 Q You think they would put something in</p> <p>11 that they did not believe there was any evidence</p> <p>12 to support?</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A Again, it depends on how you define</p> <p>16 that. So when you say "no evidence," you mean no</p> <p>17 epidemiologic studies that have ever shown an</p> <p>18 association. We know that's not true. There</p> <p>19 have been some. So there is some evidence. It's</p> <p>20 the totality of the evidence that I don't</p> <p>21 believe.</p> <p>22 MS. THOMPSON:</p> <p>23 Q Okay.</p> <p>24 A But it would not be unreasonable for</p>	<p>1 you will agree?</p> <p>2 A 2010?</p> <p>3 Q 2001.</p> <p>4 A 2001. Uh-huh. Yeah. Okay.</p> <p>5 Q Are you aware of anything that</p> <p>6 Johnson & Johnson did in 2001 to address this</p> <p>7 idea of Dr. Balkwill and others, including</p> <p>8 Dr. Ness, that talc may be causing ovarian cancer</p> <p>9 through an inflammatory process?</p> <p>10 MS. CURRY:</p> <p>11 Object to the form.</p> <p>12 A In 2000 -- in 2001?</p> <p>13 MS. THOMPSON:</p> <p>14 Q Right.</p> <p>15 Did Johnson & Johnson respond to what</p> <p>16 at least is reported as being in the literature</p> <p>17 in Lancet?</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A I'm not aware of that.</p> <p>21 MS. THOMPSON:</p> <p>22 Q I'm gonna mark as Exhibit 13 --</p> <p>23 MS. EVERETT:</p> <p>24 12.</p>

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<p>1 MS. THOMPSON: 2 Q Oh, there it is. 3 (DEPOSITION EXHIBIT NUMBER 12 4 WAS MARKED FOR IDENTIFICATION.) 5 MS. THOMPSON: 6 Q Exhibit 12 is going to be another 7 article -- another review article by Dr. Reuter 8 and authors. Oh, we need to -- sorry. Make sure 9 that's not my copy. 10 A This is mine? 11 Q That's yours, yeah. 12 Are you familiar with the journal of 13 Free Radical Biology in Medicine? 14 A I am familiar. Not something I publish 15 in much. 16 Q And probably doesn't have quite the 17 reputation of The Lancet or Cell? 18 A I don't think so. 19 Q But regardless, it's peer-reviewed. 20 A Uh-huh. 21 Q Are you familiar with any of these 22 authors? 23 A Not firsthand. Aggarwal I may have 24 heard about, but not, firsthand, no.</p>	<p>1 A Where are you now? 2 Q I'm turning to page 2, 1604 in the 3 introduction section. 4 A Uh-huh. 5 Q The second paragraph reads "Under a 6 sustained environmental stress, ROS -- R-O-S -- 7 are produced over a long time, and thus 8 significant damage may occur to cell structure 9 and functions and may induce somatic mutations 10 and neoplastic transformation. 11 "Indeed, cancer initiation and 12 progression have been linked to oxidative stress 13 by increasing DNA mutations or inducing DNA 14 damage, genome instability, and cell 15 proliferation." 16 Would you agree with that sentence in a 17 general sense? 18 MS. CURRY: 19 Object to the form. 20 A I'm just looking at the references. 21 MS. THOMPSON: 22 Q And take a moment if you need to do 23 that. 24 A Sure.</p>
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<p>1 Q And reading -- and the title of this 2 review article is "Oxidative stress, 3 inflammation, and cancer. How are they linked?" 4 Right? 5 A Correct. 6 Q Reading in the abstract, the last 7 couple of sentences starting with "How oxidative 8 stress activates inflammatory pathways leading to 9 a transformation of a normal cell to tumor cell, 10 tumor cell survival, proliferation, 11 chemoresistance, radioresistance, invasion, 12 angiogenesis, and stem cell survival is the focus 13 of this review. Overall, observations to date 14 suggest that oxidative stress, chronic 15 inflammation, and cancer are closely linked." 16 Would you agree with that statement? 17 MS. CURRY: 18 Object to the form. 19 A Yes. 20 MS. THOMPSON: 21 Q In a general sense, in a review 22 article? 23 A Correct. 24 Q And --</p>	<p>1 I think as a general statement, I 2 wouldn't -- I would not disagree with that. I 3 think that's -- yeah. 4 Q Sorry. 5 A Go ahead. 6 Q And this article was published in 2010; 7 correct? 8 A Correct. 9 Q And looking at Table 2, a partial list 10 of cancers that have been linked to reactive 11 oxygen species, and under that list is ovarian 12 cancer. 13 Would you agree that in 2010 ovarian 14 cancer had been linked to reactive oxygen 15 species? 16 MS. CURRY: 17 Object to the form. 18 A Yeah. This was a little more 19 complicated in the sense I'm not sure why every 20 case was not listed because reactive oxygen 21 species are present in essentially every cell in 22 the body. So it's a -- it's an odd table in that 23 it's a subset and then -- it's sort of implying 24 reactive oxygen species are not important in</p>

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<p>1 other cancers.</p> <p>2 And, then, too, what they reference is</p> <p>3 51, which is a really odd reference. "Loss of</p> <p>4 Mkp3 mediated by oxidative stress enhances tumor</p> <p>5 genicity and chemoresistance of ovarian cancer</p> <p>6 cells."</p> <p>7 Hardly a paper -- I mean, I'm</p> <p>8 extrapolating the title. Hardly a paper that</p> <p>9 would say that reactive oxygen species is</p> <p>10 critical to the development of ovarian cancer.</p> <p>11 That's chemoresistance. That's -- that's at the</p> <p>12 end of natural history, so...</p> <p>13 MS. THOMPSON:</p> <p>14 Q But at least the authors in this</p> <p>15 peer-reviewed review article thought appropriate</p> <p>16 to list ovarian cancer under one of the cancers</p> <p>17 that have been linked to reactive oxygen species;</p> <p>18 right?</p> <p>19 A It's there.</p> <p>20 (DEPOSITION EXHIBIT NUMBER 13</p> <p>21 WAS MARKED FOR IDENTIFICATION.)</p> <p>22 MS. THOMPSON:</p> <p>23 Q I'm marking as Exhibit 13 another</p> <p>24 review article from Lancet. This one, a little</p>	<p>1 Object to the form.</p> <p>2 A Oza and Vergote are -- Vergote is a</p> <p>3 surgeon and very much clinical. I don't think he</p> <p>4 does any work in the lab. Oza is developmental</p> <p>5 therapeutics clinical. Charlie is the scientist</p> <p>6 here.</p> <p>7 MS. THOMPSON:</p> <p>8 Q Okay. And I think --</p> <p>9 A Yeah.</p> <p>10 Q -- at least with this review article,</p> <p>11 it was meant to address --</p> <p>12 A Everything.</p> <p>13 Q -- all -- all aspects --</p> <p>14 A Right.</p> <p>15 Q -- from my reading of it.</p> <p>16 A And I think Stephanie works for Amit, I</p> <p>17 think.</p> <p>18 Q So these are well-regarded --</p> <p>19 A Uh-huh.</p> <p>20 Q -- scientists and experts in ovarian</p> <p>21 cancer. You would agree?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A Yes.</p>
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<p>1 more current.</p> <p>2 Have you seen this article, Dr. Birrer?</p> <p>3 A I know the -- I know the authors, but I</p> <p>4 haven't actually --</p> <p>5 Q Oh. Did I give you a highlighted --</p> <p>6 A I -- I don't think so.</p> <p>7 Q Okay.</p> <p>8 A It would be helpful if it was</p> <p>9 highlighted.</p> <p>10 Q It would be helpful to me also.</p> <p>11 That's okay.</p> <p>12 And, in fact, these -- I think three of</p> <p>13 the four authors you have published with. Does</p> <p>14 that sound right?</p> <p>15 A Ignace, Charlie, Amit, I know all of</p> <p>16 them. I don't know Stephanie.</p> <p>17 Q I think that was the one that I did not</p> <p>18 see on -- on your CV as one of your coauthors.</p> <p>19 And this review article -- and you</p> <p>20 would assume that -- well, we don't have to</p> <p>21 assume -- are Dr. Gourley, Dr. Vergote and</p> <p>22 Dr. Oza considered experts in the field of</p> <p>23 epithelial ovarian cancer?</p> <p>24 MS. CURRY:</p>	<p>1 MS. THOMPSON:</p> <p>2 Q And this is a review article, as we</p> <p>3 said, just published in Lancet within -- March</p> <p>4 23rd, so within the last week.</p> <p>5 Have you seen this article?</p> <p>6 A This one?</p> <p>7 Q Yes.</p> <p>8 A No. Just the last week.</p> <p>9 Q Let's look in the first section,</p> <p>10 Epidemiology and Risk Factors. And the last</p> <p>11 sentence, "Risk factors for EOC include the</p> <p>12 number of lifetime of ovulations (absence of</p> <p>13 pregnancy), early age of menarche and late age at</p> <p>14 menopause, family history of EOC, smoking, benign</p> <p>15 gynecological conditions, including</p> <p>16 endometriosis -- endometriosis, polycystic ovary</p> <p>17 disease and pelvic inflammatory disease, and</p> <p>18 potentially use of talcum powder."</p> <p>19 Would you agree that at least the</p> <p>20 authors thought that the use of talcum powder is</p> <p>21 potentially a risk factor for EOC?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A And, again, this is a review. So I</p>

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<p>1 think they're trying to be inclusive. And I</p> <p>2 don't actually know that any of them believe</p> <p>3 that.</p> <p>4 MS. THOMPSON:</p> <p>5 Q So would -- would they -- would they</p> <p>6 have -- would it be the two options again, either</p> <p>7 they're wrong --</p> <p>8 A (Nods affirmatively.)</p> <p>9 Q -- or that they're just reporting on</p> <p>10 what the literature states?</p> <p>11 A (Nods affirmatively.)</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A Yeah. I think it extends beyond</p> <p>15 talcum, too, to be honest with you. I don't -- I</p> <p>16 don't consider smoking to be a strong risk for</p> <p>17 ovarian cancer. And PID, I don't either.</p> <p>18 So -- and I don't know of many of my --</p> <p>19 I mean, we don't -- we don't want our patients</p> <p>20 smoking. But I don't know of many of the</p> <p>21 gynecologic oncologists I work with who -- that's</p> <p>22 on their -- that's on their risk list.</p> <p>23 MS. THOMPSON:</p> <p>24 Q Even for mucinous?</p>	<p>1 Q So the authors, if they were reporting</p> <p>2 on the potential risk of talcum powder use in</p> <p>3 ovarian cancer chose to cite Penninkilampi as a</p> <p>4 source -- as the source for that information;</p> <p>5 correct?</p> <p>6 A They reference it.</p> <p>7 Q And you would assume they would choose</p> <p>8 the most authoritative article that was available</p> <p>9 in the literature?</p> <p>10 MS. CURRY:</p> <p>11 Object to the form.</p> <p>12 MS. THOMPSON:</p> <p>13 Q Wouldn't you?</p> <p>14 A I would not assume that.</p> <p>15 Q You would assume they'd pick something</p> <p>16 that wasn't as authoritative? There's something</p> <p>17 else they could have picked?</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A They may have -- they may have picked</p> <p>21 that because it was one of the more recent</p> <p>22 meta-analyses, and so it was convenient. And</p> <p>23 it's flawed. We can go over if you'd like.</p> <p>24 MS. THOMPSON:</p>
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<p>1 A Well, now you're gonna get complicated</p> <p>2 on me because, you know, there are people that</p> <p>3 don't think -- there are mucinous tumors of the</p> <p>4 ovary. Bob Kirkman is one of them, and that is</p> <p>5 all GI.</p> <p>6 So I think -- I don't think it's all</p> <p>7 that relevant because it's such a rare tumor.</p> <p>8 Q And the citation for the reference</p> <p>9 that --</p> <p>10 A 8?</p> <p>11 Q -- a risk factor potentially would --</p> <p>12 could be the use of talcum powder is the</p> <p>13 Penninkilampi meta-analysis; right?</p> <p>14 A That's referenced in 8, yes.</p> <p>15 Q So at least the authors, the reviewers,</p> <p>16 the editors of the journal felt that the most</p> <p>17 authoritative source would be that Penninkilampi</p> <p>18 meta-analysis. Would you agree?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A Say that again. I'm sorry.</p> <p>22 MS. THOMPSON:</p> <p>23 Q Yeah.</p> <p>24 A I could read it.</p>	<p>1 Q Well, I'm just saying these authors</p> <p>2 picked that to -- to support the statement in</p> <p>3 their review article in The Lancet that the use</p> <p>4 of talcum powder is potentially a risk factor for</p> <p>5 ovarian cancer.</p> <p>6 A Well, I would agree that they picked</p> <p>7 that reference. I disagree that that's because</p> <p>8 they thought it was the most authoritative</p> <p>9 article. It is one of the more recent, and, so,</p> <p>10 therefore, a lot of the other papers would be</p> <p>11 included in it. So it's a convenient place to</p> <p>12 steer a reader.</p> <p>13 Q Do you think they'd pick it if they</p> <p>14 thought it was flawed?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A Probably if -- if it was seriously</p> <p>18 flawed, I don't think they would have picked it.</p> <p>19 Yeah.</p> <p>20 MS. THOMPSON:</p> <p>21 Q And would you agree, also, that the</p> <p>22 reviewers would not have included an article that</p> <p>23 the reviewers felt was seriously flawed?</p> <p>24 MS. CURRY:</p>

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<p>1 Object to the form.</p> <p>2 A Again, it's a little bit -- having been</p> <p>3 involved in these processes, to be perfectly</p> <p>4 frank, you get a review article with a review of</p> <p>5 147 references, you're not gonna go through them</p> <p>6 all. So I don't know I can say with any</p> <p>7 authority that the reviewers looked at this and</p> <p>8 said, gee, they picked the one talc paper that is</p> <p>9 really spectacular.</p> <p>10 MS. THOMPSON:</p> <p>11 Q Okay. So there were -- but there --</p> <p>12 there were no --</p> <p>13 A The review, and -- and it's true for</p> <p>14 the editor too.</p> <p>15 Q Okay. So at least there were no red</p> <p>16 flags in front of the reviewers and the editor</p> <p>17 when they saw the Penninkilampi article cited for</p> <p>18 that reference?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A I --</p> <p>22 MS. THOMPSON:</p> <p>23 Q That would cause them to --</p> <p>24 A I don't know they noticed it.</p>	<p>1 lunch?</p> <p>2 MS. CURRY:</p> <p>3 We actually did order in lunch. I'm</p> <p>4 not sure if we -- if you want to take a quick</p> <p>5 break, I can check on the estimated time of</p> <p>6 arrival.</p> <p>7 MS. THOMPSON:</p> <p>8 Sure. Or we can just keep going until</p> <p>9 we get word. Whatever --</p> <p>10 A Or we could just finish.</p> <p>11 MR. MIZGALA:</p> <p>12 I second that.</p> <p>13 MS. GARBER:</p> <p>14 You guys keep going. I'll check.</p> <p>15 MS. THOMPSON:</p> <p>16 Are you telling me you're not having</p> <p>17 fun? I think he liked the test.</p> <p>18 THE WITNESS:</p> <p>19 Yeah. It would have been nice to have</p> <p>20 the little box -- the little circles you could</p> <p>21 fill in. You know.</p> <p>22 MS. THOMPSON:</p> <p>23 And then I could just put it in the</p> <p>24 computer.</p>
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<p>1 Q Okay. But the editors selected that</p> <p>2 article; correct?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 MS. THOMPSON:</p> <p>6 Q For whatever reason?</p> <p>7 A The --</p> <p>8 Q The authors.</p> <p>9 A The authors selected it.</p> <p>10 Q Sorry.</p> <p>11 A Not -- not the editors. Correct.</p> <p>12 Q Thank you. I meant to say authors.</p> <p>13 A And, again, I would just emphasize it</p> <p>14 says "potentially use of talcum powder."</p> <p>15 Q That's right.</p> <p>16 A Okay.</p> <p>17 Q And at least in this statement, the</p> <p>18 reference to talcum powder as potentially a risk</p> <p>19 factor did not separate out the subtypes. It's</p> <p>20 referring to EOC; correct?</p> <p>21 A I -- that's the way I would read it,</p> <p>22 right.</p> <p>23 MS. THOMPSON:</p> <p>24 Dawn, what are you thinking about</p>	<p>1 THE WITNESS:</p> <p>2 No mumbling? Sorry.</p> <p>3 MS. CURRY:</p> <p>4 Okay. So the lunch, I was just told,</p> <p>5 is actually here. So it's up to you when you're</p> <p>6 in a good breaking point.</p> <p>7 MS. THOMPSON:</p> <p>8 Dr. Birrer, do you want to take a break</p> <p>9 for lunch or do you want to go another 15 or 20</p> <p>10 minutes?</p> <p>11 THE WITNESS:</p> <p>12 Going would be fine.</p> <p>13 MS. THOMPSON:</p> <p>14 Q Okay.</p> <p>15 A Yeah.</p> <p>16 Q Let's -- let's look at the IARC 93, the</p> <p>17 one that --</p> <p>18 A Uh-huh.</p> <p>19 Q -- addresses the nonasbestiform talc.</p> <p>20 And turning to page 277 in the exposure data</p> <p>21 introduction --</p> <p>22 A Uh-huh. Do you want to use mine?</p> <p>23 Q Let's have a blank one to follow along.</p> <p>24 Does this section define the</p>

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<p>1 nonasbestiform talc?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 MS. THOMPSON:</p> <p>5 Q Oh, there it is. And let's just read</p> <p>6 along in that third paragraph.</p> <p>7 A Okay.</p> <p>8 Q "Asbestiform talc fibers are very long</p> <p>9 and thin and occur in parallel bundles that are</p> <p>10 easily separated from one another by hand</p> <p>11 pressure." And asbestos -- no. Just strike</p> <p>12 that.</p> <p>13 You're -- you're not an expert in the</p> <p>14 different types of asbestos or talc in its</p> <p>15 different --</p> <p>16 A I'm learning --</p> <p>17 Q Are you?</p> <p>18 A I'm learning a lot.</p> <p>19 Q I -- well, I don't want to ask those</p> <p>20 questions to you later because then you'll be an</p> <p>21 expert.</p> <p>22 Let's -- let's go to the conclusions of</p> <p>23 IARC. We've already established that IARC used a</p> <p>24 pretty extensive methodology in reaching their</p>	<p>1 was -- well, that there was limited evidence in</p> <p>2 humans for the carcinogenicity in peroneal use of</p> <p>3 talcum powder body product. Is that what IARC</p> <p>4 concluded?</p> <p>5 A That's in 6.1, the second one. Yes.</p> <p>6 Q Right.</p> <p>7 And there is limited evidence in</p> <p>8 experimental animals; right?</p> <p>9 A 6.2. Yes.</p> <p>10 Q And in the rationale, the authors</p> <p>11 state, third paragraph, "For peroneal use of</p> <p>12 talcum-based body power, many case-control</p> <p>13 studies of ovarian cancer found a modest but an</p> <p>14 unusually consistent excessive risk, although the</p> <p>15 impact of bias and potential confounding could</p> <p>16 not be ruled out."</p> <p>17 Is -- is that your understanding of the</p> <p>18 conclusions?</p> <p>19 A That's what they concluded.</p> <p>20 Q And --</p> <p>21 A We're done with IARC?</p> <p>22 Q We're done with IARC.</p> <p>23 And you also looked at the Health</p> <p>24 Canada Assessment; right?</p>
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<p>1 conclusions; right?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 A Yes.</p> <p>5 MS. THOMPSON:</p> <p>6 Q And in your -- in your opinion, IARC</p> <p>7 got -- got it wrong; right?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A I think the net -- and I -- let me just</p> <p>11 summarize. I agree that they did a thorough sort</p> <p>12 of process here. In the end, what they</p> <p>13 concluded, I think, was -- was wrong. If I</p> <p>14 recall correctly, it's 2B.</p> <p>15 MS. THOMPSON:</p> <p>16 Q That's right.</p> <p>17 A Was the classification.</p> <p>18 Q But 2B does not mean that it's not</p> <p>19 carcinogenic, does it?</p> <p>20 A Means it's possible carcinogenic. I</p> <p>21 think that's by definition.</p> <p>22 Q Right.</p> <p>23 And -- and in this situation, the</p> <p>24 reason for the classification was that there</p>	<p>1 A Yes.</p> <p>2 Q And we agreed that the methodology that</p> <p>3 Health Canada applied for -- for their</p> <p>4 determination was also extensive; right?</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 A They were systematic and thorough. I</p> <p>8 think it was pretty complicated, yeah.</p> <p>9 MS. THOMPSON:</p> <p>10 Q And what's your understanding of the</p> <p>11 conclusions reached by the -- Health Canada?</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 MS. THOMPSON:</p> <p>15 Q Scientists.</p> <p>16 A Well, they concluded that there was a</p> <p>17 low risk of harm to the environment from talc.</p> <p>18 Q Is that what you came away with?</p> <p>19 A Well, it was in the third paragraph.</p> <p>20 So it was important to note that. But they did</p> <p>21 conclude that talc meets one of the criteria.</p> <p>22 That was Section 64. And so they concluded that</p> <p>23 it potentially presented a health risk to</p> <p>24 Canadians, if I got that right.</p>

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<p>1 Q And do you think it was just to</p> <p>2 Canadians?</p> <p>3 A Well, that's the way they quoted it.</p> <p>4 Q And --</p> <p>5 A In fact, the statement is "may</p> <p>6 constitute a danger in Canada to health" --</p> <p>7 "human health" -- "human life or health."</p> <p>8 Q And they also made the -- well, let's</p> <p>9 read beginning on page little -- little 3, i --</p> <p>10 iii?</p> <p>11 A I'm sorry. Where are you?</p> <p>12 Q Little -- little roman numeral 3.</p> <p>13 A Three? Yeah.</p> <p>14 Q Is your understanding that the -- that</p> <p>15 Health Canada found that the available data were</p> <p>16 indicative of a causal effect?</p> <p>17 A Where are you reading?</p> <p>18 Q I was just asking you what your</p> <p>19 understanding was.</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A I'm not sure that they actually found</p> <p>23 causal effects.</p> <p>24 MS. THOMPSON:</p>	<p>1 Q -- executive summary.</p> <p>2 A Yeah. Uh-huh.</p> <p>3 Q "Given that there is potential for</p> <p>4 peroneal exposure to talc from the use of various</p> <p>5 self-care products, for example, body powder,</p> <p>6 baby powder, diaper and rash creams, gentle</p> <p>7 antiperspirants and deodorants, body wipes, bath</p> <p>8 bombs, a potential concern for human health has</p> <p>9 been identified."</p> <p>10 Correct?</p> <p>11 A I agree with that.</p> <p>12 Q And is it your opinion that Health</p> <p>13 Canada got it wrong also?</p> <p>14 MS. CURRY:</p> <p>15 Object to the form.</p> <p>16 A So it's interesting. When I reviewed</p> <p>17 this was -- again, this is a very recent -- looks</p> <p>18 like December 2018 -- decision by Health Canada</p> <p>19 based upon a huge body of literature, which I had</p> <p>20 reviewed and come to a different conclusion.</p> <p>21 So there really was not very much new</p> <p>22 data to draw this conclusion. So, you know,</p> <p>23 again, I think very much like IARC, I think they</p> <p>24 got it wrong.</p>
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<p>1 Q Okay. Well, let's -- let's read</p> <p>2 beginning -- the paragraph with "The</p> <p>3 meta-analyses."</p> <p>4 A Where are you? Oh, the -- yeah.</p> <p>5 Q "The meta-analyses of the available</p> <p>6 human studies in the peer-reviewed literature" --</p> <p>7 A Yep.</p> <p>8 Q -- "indicate a statistically</p> <p>9 significant positive association between perineal</p> <p>10 exposure to talc and ovarian cancer. Further,</p> <p>11 available data are indicative of a causal</p> <p>12 effect."</p> <p>13 A Uh-huh.</p> <p>14 Q So they did --</p> <p>15 A (Nods affirmatively.)</p> <p>16 Q -- determine that it was indicative of</p> <p>17 a causal effect; right?</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A That's what they said, yes. It's not</p> <p>21 referenced, but --</p> <p>22 MS. THOMPSON:</p> <p>23 Q Well, this is the --</p> <p>24 A Yeah.</p>	<p>1 MS. THOMPSON:</p> <p>2 Q And you don't think that this is a</p> <p>3 situation where scientists can look at the same</p> <p>4 data and -- and make different conclusions?</p> <p>5 A No.</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 MS. THOMPSON:</p> <p>9 Q Do you have any reason to believe that</p> <p>10 the scientists who worked on this project were</p> <p>11 unreasonable?</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A Other than the fact they drew the wrong</p> <p>15 conclusion here, I know nothing else about them,</p> <p>16 so...</p> <p>17 MS. THOMPSON:</p> <p>18 Q You don't have any reason to believe</p> <p>19 they were incompetent?</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A No.</p> <p>23 MS. THOMPSON:</p> <p>24 Q Do you have any reason to believe that</p>

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<p>1 they weren't good scientists?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 A I don't really have a lot of knowledge</p> <p>5 of them. If I could actually find the list of</p> <p>6 individuals who made this decision -- I don't</p> <p>7 think it's published.</p> <p>8 MS. THOMPSON:</p> <p>9 Q And did you -- this was done under the</p> <p>10 auspices, I believe, of the Minister of Health.</p> <p>11 A Uh-huh.</p> <p>12 Q You don't know the Minister of Health</p> <p>13 in Canada, do you?</p> <p>14 A I don't.</p> <p>15 Q Or know that he would -- or she would</p> <p>16 not be competent?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A I have no direct evidence for that.</p> <p>20 MS. THOMPSON:</p> <p>21 Q Do you take any issue with the weight</p> <p>22 of the evidence methodology that Health Canada</p> <p>23 applied?</p> <p>24 A No.</p>	<p>1 A In terms of peer review, scientific</p> <p>2 peer review?</p> <p>3 Q Correct.</p> <p>4 A I can't say that definitively.</p> <p>5 Q If you'll look at the -- and the copy</p> <p>6 that I'm looking at doesn't have page numbers, so</p> <p>7 that's why it's -- I'm --</p> <p>8 A Roughly.</p> <p>9 Q -- making it difficult.</p> <p>10 But if you look at the big bold</p> <p>11 introduction that comes right after the synopsis,</p> <p>12 it should be about the -- it may be the little</p> <p>13 numbers.</p> <p>14 A Introduction?</p> <p>15 Q Yeah.</p> <p>16 And the very bottom of that page, I'm</p> <p>17 reading "The human health portion of this</p> <p>18 assessment has undergone external peer review</p> <p>19 and/or consultation?"</p> <p>20 Doesn't -- does the assessment, at</p> <p>21 least, state that it underwent peer review and</p> <p>22 consultation?</p> <p>23 A It states that. I don't quite -- I</p> <p>24 don't honestly know what that means.</p>
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<p>1 Q Only that they came up with the wrong</p> <p>2 conclusion; right?</p> <p>3 A Correct.</p> <p>4 Q And this assessment, like IARC, was</p> <p>5 based on talc -- cosmetic-grade talc and not on</p> <p>6 potential impurities such as asbestos. Is that</p> <p>7 also your understanding?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A That is my understanding. So, you</p> <p>11 know, again, it's -- it's the same epi data. The</p> <p>12 epi data is focused on talcum powder. So that --</p> <p>13 that applies here, too.</p> <p>14 MS. THOMPSON:</p> <p>15 Q And is it your understanding that the</p> <p>16 human health portion of the Health Canada</p> <p>17 assessment went through a peer-review process?</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 MS. THOMPSON:</p> <p>21 Q With external reviewers.</p> <p>22 A I didn't see that described.</p> <p>23 Q So you don't know one way or the other</p> <p>24 whether it went through a review process?</p>	<p>1 Q Okay.</p> <p>2 A And the public comment period, of</p> <p>3 course, is just a governmental response.</p> <p>4 Q Do you know if Johnson & Johnson has</p> <p>5 submitted comments to Health Canada?</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 A Not that I know of.</p> <p>9 MS. THOMPSON:</p> <p>10 Q Have you submitted comments to Health</p> <p>11 Canada --</p> <p>12 A No.</p> <p>13 Q -- with your opinions?</p> <p>14 A No.</p> <p>15 Q Do you intend to submit any opinions to</p> <p>16 Health Canada?</p> <p>17 A I doubt it.</p> <p>18 Q You are -- are you aware that talc used</p> <p>19 as a dry powder lubricant on condoms was</p> <p>20 substituted with cornstarch in the 1990s?</p> <p>21 A I believe I am familiar with that.</p> <p>22 Q Do you know why?</p> <p>23 A No.</p> <p>24 Q Do you know that dusting diaphragms,</p>

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<p>1 the practice of dusting diaphragms with talcum</p> <p>2 powder was abandoned approximately the same time?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A Yes.</p> <p>6 MS. THOMPSON:</p> <p>7 Q Do you know why?</p> <p>8 A No.</p> <p>9 Q Was it for concerns about inflammatory</p> <p>10 and cancer effects?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A Could have been. I don't -- can't</p> <p>14 quote that.</p> <p>15 MS. THOMPSON:</p> <p>16 Q Were you aware that FDA banned -- has</p> <p>17 banned powder examination and surgical gloves?</p> <p>18 A Yes.</p> <p>19 Q Do you know why?</p> <p>20 A That was based upon the concern about</p> <p>21 the generation of fibrosis.</p> <p>22 Q And other inflammatory processes in</p> <p>23 the -- in the peritoneal cavity?</p> <p>24 MS. CURRY:</p>	<p>1 Q Are you aware of the differences</p> <p>2 between cornstarch and talc?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A In terms of biochemical and physical</p> <p>6 differences?</p> <p>7 MS. THOMPSON:</p> <p>8 Q Sure. Let's start there.</p> <p>9 A Yeah. I don't think I can list them</p> <p>10 all. But certainly cornstarch is a biologic</p> <p>11 agent, it's a carbohydrate, and talc is a</p> <p>12 mineral.</p> <p>13 We've already talked a little bit about</p> <p>14 the size of particles in talcum powder and it's</p> <p>15 exceedingly variable. So it's a little hard to</p> <p>16 compare those two particles. But I would think</p> <p>17 that starch would be more homogeneous and of a</p> <p>18 different size.</p> <p>19 And then, you know, biochemical</p> <p>20 differences are substantial. I mean, this is a</p> <p>21 carbohydrate, which can be broken down by certain</p> <p>22 enzymes, has, you know, a firm structure to it.</p> <p>23 Talc, as a mineral, forms suspensions.</p> <p>24 It is not soluble. Starch is more soluble. So</p>
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<p>1 Object to the form.</p> <p>2 A I would define -- I would define that</p> <p>3 as fibrosis, if not inflammatory.</p> <p>4 MS. THOMPSON:</p> <p>5 Q Do you consider granulomas an</p> <p>6 inflammatory response?</p> <p>7 A It's in the characterization of chronic</p> <p>8 inflammation, yes.</p> <p>9 Q Are adhesions an inflammatory response?</p> <p>10 A Not necessarily.</p> <p>11 Q And they would be an acute response</p> <p>12 if -- if they were caused by an inflammatory</p> <p>13 reaction?</p> <p>14 MS. CURRY:</p> <p>15 Object to the form.</p> <p>16 A So adhesions are, you know, essentially</p> <p>17 scar tissue and fibrosis. The etiology of it is</p> <p>18 pretty broad. Some of it could be chronic</p> <p>19 inflammation. Some of it could be acute</p> <p>20 inflammation. And I would not even rule out the</p> <p>21 possibility that general wound healing would give</p> <p>22 rise to scar tissue. And that may not</p> <p>23 necessarily fit the criteria of inflammation.</p> <p>24 MS. THOMPSON:</p>	<p>1 there's differences.</p> <p>2 Q So, in general terms, cornstarch would</p> <p>3 typically be absorbed or metabolized by the body?</p> <p>4 MS. CURRY:</p> <p>5 Object to the form.</p> <p>6 MS. THOMPSON:</p> <p>7 Q Would you agree?</p> <p>8 A Absorbed or -- there's -- it would</p> <p>9 certainly be more likely, I think, than a</p> <p>10 mineral, yeah.</p> <p>11 Q Whereas the mineral, once it's there,</p> <p>12 is expected to remain there; correct?</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A It's a little hard to tell because then</p> <p>16 there are other mechanisms remove particulate</p> <p>17 matters; right? So macrophages come along and</p> <p>18 they phagocytize them. That macrophage then may</p> <p>19 travel somewhere else and then essentially</p> <p>20 deposit it in a way that the mineral -- the</p> <p>21 mineral particle could be removed. So -- so it's</p> <p>22 a little bit complex.</p> <p>23 MS. THOMPSON:</p> <p>24 Q Can inhaled talc particles appear in</p>

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<p>1 distant organs?</p> <p>2 A So there is some data, I believe, in</p> <p>3 animal studies that high concentrations of talc,</p> <p>4 either in the pleural cavity or in intratracheal</p> <p>5 injections can end up in what --</p> <p>6 And I think I put them in the expert</p> <p>7 report; for instance, the spleen.</p> <p>8 Q And ovaries? Can they occur in the</p> <p>9 ovaries?</p> <p>10 A So if you look at the literature -- you</p> <p>11 know, and I went through in pretty big detail --</p> <p>12 nobody's looked. So there's no reproductive</p> <p>13 organs in any of those studies. At least the</p> <p>14 ones that I have looked at. So I don't think we</p> <p>15 know, and I don't think we could assume that.</p> <p>16 Q Can talc fibers enter the peritoneal</p> <p>17 cavity?</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A Again, we're back to this mineral</p> <p>21 structure, and I'm not going to be able to</p> <p>22 comment on that.</p> <p>23 MS. THOMPSON:</p> <p>24 Q And how about asbestos fibers?</p>	<p>1 know that.</p> <p>2 Q So you know -- you -- we know that</p> <p>3 asbestos fibers can reach the peritoneal cavity;</p> <p>4 correct?</p> <p>5 A Yes.</p> <p>6 Q And -- and let me just understand</p> <p>7 you -- what you're opining today is that we just</p> <p>8 don't know how they get there?</p> <p>9 MS. CURRY:</p> <p>10 Object to the form.</p> <p>11 A I don't know. So -- so I think one of</p> <p>12 the hypotheses that -- after asbestos -- again,</p> <p>13 I'm not -- I wasn't asked to explore asbestos in</p> <p>14 great detail. This is more my medical training</p> <p>15 speaking.</p> <p>16 But as people inhaled asbestos, these</p> <p>17 particles would work their way out into the</p> <p>18 pleural cavity --</p> <p>19 MS. THOMPSON:</p> <p>20 Q So --</p> <p>21 A -- which is where they would do their</p> <p>22 badness. And then, there is a hypothesis</p> <p>23 connection between the pleural cavity and the</p> <p>24 peritoneal cavity.</p>
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<p>1 A Well, asbestos exposure can, of course,</p> <p>2 give rise to mesothelioma and can give rise to</p> <p>3 peritoneal mesotheliomas. So it's got to get</p> <p>4 there from somewhere.</p> <p>5 Q Do you have an opinion as to whether</p> <p>6 asbestos fibers can get to the peritoneal cavity</p> <p>7 through peritoneal exposure and migration through</p> <p>8 the genital tract?</p> <p>9 MS. CURRY:</p> <p>10 Object to the form.</p> <p>11 A I don't have any data on that.</p> <p>12 MS. THOMPSON:</p> <p>13 Q So you have no opinion.</p> <p>14 A I would say analogous with the</p> <p>15 migration data that there's not a lot of evidence</p> <p>16 things are migrating retrograde. So -- and I</p> <p>17 think -- although I don't think those experiments</p> <p>18 have been done with asbestos in mind -- and we</p> <p>19 know that asbestos can travel with high</p> <p>20 insulation [sic] -- you know, inhalation of</p> <p>21 asbestos can get in the pleural cavity. It gets</p> <p>22 there from somewhere. It's got to be inside the</p> <p>23 lung. It has to get out in the pleural cavity,</p> <p>24 and then again, the peritoneal cavity. So we</p>	<p>1 Q So direct penetration of the fiber</p> <p>2 through the pleura?</p> <p>3 A The diaphragm's are pretty secure</p> <p>4 structures, so it's a little bit -- I can't say,</p> <p>5 hey, here's the pathway. But that's the</p> <p>6 supposition.</p> <p>7 Q Okay.</p> <p>8 A Okay.</p> <p>9 Q Do you -- are you aware of any</p> <p>10 epidemiologic or other studies that have linked</p> <p>11 the use of perineal cornstarch with ovarian</p> <p>12 cancer?</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A Perineal cornstarch with ovarian</p> <p>16 cancer?</p> <p>17 MS. THOMPSON:</p> <p>18 Q Correct. Let me phrase that</p> <p>19 differently just so it's clear.</p> <p>20 A Okay.</p> <p>21 Q Are you aware of any studies that link</p> <p>22 the perineal use of cornstarch products with</p> <p>23 ovarian cancer?</p> <p>24 MS. CURRY:</p>

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<p>1 Object to the form.</p> <p>2 A Therapeutically or just accidentally?</p> <p>3 MS. THOMPSON:</p> <p>4 Q Um -- as a substitute for talcum</p> <p>5 powder. If a woman is using corn -- a</p> <p>6 cornstarch-based perineal dusting powder, are you</p> <p>7 aware of any studies that have linked that usage</p> <p>8 to ovarian cancer?</p> <p>9 A Not that I -- no.</p> <p>10 Q Do you agree that -- I might go ahead</p> <p>11 and go back to that -- that -- the FDA, mark it</p> <p>12 as --</p> <p>13 A The letter?</p> <p>14 Q The letter.</p> <p>15 I know. But I don't have my stickers.</p> <p>16 MS. THOMPSON:</p> <p>17 My fault; not yours.</p> <p>18 THE COURT REPORTER:</p> <p>19 Okay.</p> <p>20 MS. THOMPSON:</p> <p>21 Shall we do another few just to get us</p> <p>22 to lunch?</p> <p>23 THE COURT REPORTER:</p> <p>24 I forget what number we're on.</p>	<p>1 summary on the following page, one, purpose and</p> <p>2 coverage of the final rule, and the last</p> <p>3 paragraph -- or the last sentence of the first</p> <p>4 paragraph says, "However, the use of powder on</p> <p>5 medical gloves presents numerous risks to</p> <p>6 patients and healthcare workers, including</p> <p>7 inflammation, granulomas and respiratory allergic</p> <p>8 reaction."</p> <p>9 Does that at least state what the FDA</p> <p>10 considers the reasons for the removal of talcum</p> <p>11 powder from surgical gloves?</p> <p>12 A Yes, it does.</p> <p>13 Q Are you aware that Health Canada</p> <p>14 determined that the migration of talc particles</p> <p>15 to the ovaries from perineal use was a plausible</p> <p>16 or is a plausible mechanism for the detection of</p> <p>17 talc in the ovaries?</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A I believe they did. You're --</p> <p>21 MS. THOMPSON:</p> <p>22 Q And you -- do you disagree with the</p> <p>23 determination that Health Canada reached</p> <p>24 regarding the -- the migration of talc particles</p>
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<p>1 MS. THOMPSON:</p> <p>2 We're on --</p> <p>3 MS. EVERETT:</p> <p>4 14.</p> <p>5 MS. THOMPSON:</p> <p>6 14.</p> <p>7 (DEPOSITION NUMBER 14 WAS</p> <p>8 MARKED FOR IDENTIFICATION.)</p> <p>9 MS. THOMPSON:</p> <p>10 Q I'm going to go ahead and mark the FDA</p> <p>11 announcement on the banning of -- of talcum</p> <p>12 powder just so we can see what they actually did</p> <p>13 say about the reasons.</p> <p>14 And --</p> <p>15 A This is for gloves. For gloves.</p> <p>16 Surgical gloves.</p> <p>17 Q Examination and surgical gloves.</p> <p>18 A Yeah.</p> <p>19 Q And just in the bottom part of the</p> <p>20 right-hand side of the first page, "Banned</p> <p>21 Devices; Powdered Surgeon's Gloves, Powdered</p> <p>22 Patient Examination Gloves, and Absorbable Powder</p> <p>23 For Lubricating on a Surgeon's Glove."</p> <p>24 And if you'll turn to the executive</p>	<p>1 to the ovaries being a plausible mechanism for</p> <p>2 the detection of talc in ovaries?</p> <p>3 A Yes, I do.</p> <p>4 Q In your report, you state that the</p> <p>5 migration is contrary to basic anatomy and common</p> <p>6 sense, I believe.</p> <p>7 Do you still hold that opinion?</p> <p>8 A Where are you reading? Back to my</p> <p>9 report?</p> <p>10 Q I have to get your report out.</p> <p>11 A Yeah. That's get that out there.</p> <p>12 Q His expert report.</p> <p>13 And in the -- under "Migration" on page</p> <p>14 5, "Supposed Presence of Talc in Ovaries."</p> <p>15 A Ah. Okay. Yep.</p> <p>16 Q And Health Canada's conclusion was that</p> <p>17 the migration of talc particles to the ovaries</p> <p>18 from perineal use is a plausible mechanism for</p> <p>19 the detection of talc to the ovaries.</p> <p>20 But at least your opinion is that the</p> <p>21 presence of talc in the ovaries cannot be</p> <p>22 explained by migration. Is that right?</p> <p>23 A Well, the studies that I looked at here</p> <p>24 mostly are the presence of talc in cancer of the</p>

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<p>1 ovary, and there were some control patients, I</p> <p>2 believe, with breast cancer where they looked at</p> <p>3 the ovary.</p> <p>4 And these -- these studies have been</p> <p>5 around for a while. I've reviewed them multiple</p> <p>6 times, and they're just seriously flawed, from my</p> <p>7 perspective. So I don't know that you can</p> <p>8 conclude that. But these are -- these are just</p> <p>9 the studies that show the presence of talc in</p> <p>10 specimens. It's not the next line of evidence,</p> <p>11 which is actual variety of human -- human</p> <p>12 experiments, if you will, which are also</p> <p>13 seriously flawed.</p> <p>14 So, you know, I essentially reviewed</p> <p>15 all of that and came to the conclusion you can't</p> <p>16 conclude anything. There's no convincing data.</p> <p>17 Health Canada came to a different conclusion.</p> <p>18 Q And is that because Health Canada got</p> <p>19 it wrong again, or is that because scientists can</p> <p>20 come to different conclusions when reviewing the</p> <p>21 same data?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A Based on my review on this, they got it</p>	<p>1 A I think they were mystified and they</p> <p>2 tried to argue that the reason why they found</p> <p>3 talc in everybody --</p> <p>4 MS. THOMPSON:</p> <p>5 Q Dr. Birrer, sorry.</p> <p>6 My question was: Do you know what the</p> <p>7 authors concluded?</p> <p>8 A I'm saying it.</p> <p>9 Q That's "yes" or "no."</p> <p>10 A Oh.</p> <p>11 Q Do you know what the authors concluded?</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A Yes.</p> <p>15 MS. THOMPSON:</p> <p>16 Q What did the authors conclude?</p> <p>17 A So I think they were mystified. And</p> <p>18 so --</p> <p>19 Q No. Did the authors -- where do you</p> <p>20 see in the paper that the authors were mystified?</p> <p>21 A Because --</p> <p>22 MS. CURRY:</p> <p>23 Let him finish and don't cut him off.</p> <p>24 MS. THOMPSON:</p>
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<p>1 wrong.</p> <p>2 MS. THOMPSON:</p> <p>3 Q Regarding the Heller paper --</p> <p>4 A Uh-huh.</p> <p>5 Q -- let's just go back to your report.</p> <p>6 Do you know what the Heller authors</p> <p>7 concluded from their study?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A Do you --</p> <p>11 MS. THOMPSON:</p> <p>12 Q This is the paper regarding the talc</p> <p>13 presence in --</p> <p>14 A Right.</p> <p>15 Q -- ovaries from the Heller paper.</p> <p>16 MS. CURRY:</p> <p>17 Object to the form.</p> <p>18 A So just to summarize real quick --</p> <p>19 MS. THOMPSON:</p> <p>20 Q No. Not asking that question.</p> <p>21 Do you know what the Heller authors</p> <p>22 concluded on the basis of their study?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>	<p>1 Not when he's not answering my</p> <p>2 question.</p> <p>3 THE WITNESS:</p> <p>4 Well, I --</p> <p>5 MS. CURRY:</p> <p>6 He's trying to answer it. You keep</p> <p>7 cutting him off at every word.</p> <p>8 MS. THOMPSON:</p> <p>9 I asked where in the paper did the</p> <p>10 authors say they were mystified, and he needs to</p> <p>11 explain that.</p> <p>12 MS. CURRY:</p> <p>13 You haven't even marked the paper. You</p> <p>14 are asking him based on his expert report, and</p> <p>15 he's --</p> <p>16 MS. THOMPSON:</p> <p>17 I didn't ask him on the basis of his</p> <p>18 expert report. I asked him on the basis of his</p> <p>19 knowledge.</p> <p>20 I'll mark the Heller paper 15.</p> <p>21 (DEPOSITION EXHIBIT NUMBER 15 WAS</p> <p>22 MARKED FOR IDENTIFICATION.)</p> <p>23 MS. THOMPSON:</p> <p>24 Q Do you see anywhere in the paper that</p>

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<p>1 the authors were mystified? Yes or no?</p> <p>2 A I think they were confused by the lack</p> <p>3 of association.</p> <p>4 Q Do you see where the authors were</p> <p>5 mystified?</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 MS. THOMPSON:</p> <p>9 Q There's nowhere where the authors say</p> <p>10 they were mystified, is there, Dr. Birrer?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 MS. THOMPSON:</p> <p>14 Q I'll withdraw the question.</p> <p>15 A Okay.</p> <p>16 Q Let's just go to the conclusions.</p> <p>17 "Conclusions: The detection of talc in</p> <p>18 all ovaries demonstrates that it can reach the</p> <p>19 upper genital tract."</p> <p>20 Is that what the authors of the Heller</p> <p>21 paper conclude?</p> <p>22 A Yes.</p> <p>23 Q And yet you're critical of the</p> <p>24 plaintiffs' experts because they conclude the</p>	<p>1 Q Is that your opinion?</p> <p>2 A Say that again.</p> <p>3 Q It's not that scientists can come to</p> <p>4 different conclusions. It's that the 12 experts</p> <p>5 who state the same conclusions as the authors of</p> <p>6 the paper are wrong and you're right?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 MS. THOMPSON:</p> <p>10 Q Is that a correct statement?</p> <p>11 A Correct.</p> <p>12 Q One of your criticisms of the Cramer</p> <p>13 paper from 2007 that detected talc in lymph nodes</p> <p>14 was that it was a case report; correct?</p> <p>15 A Correct.</p> <p>16 Q And you've published with Dr. Cramer;</p> <p>17 correct?</p> <p>18 A I don't think I'm on papers with</p> <p>19 Dr. Cramer.</p> <p>20 Q And have you seen the paper that was</p> <p>21 published recently of a series of cases in which</p> <p>22 talc was detected in the lymph nodes?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>
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<p>1 same thing that the authors of the paper</p> <p>2 conclude; right?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 MS. THOMPSON:</p> <p>6 Q In fact, I -- well, go ahead and</p> <p>7 answer.</p> <p>8 A Well, I'm critical of the paper and the</p> <p>9 experts who agreed with it.</p> <p>10 Q And I -- I think there were no fewer</p> <p>11 than 12 experts that you think were wrong on</p> <p>12 this; right?</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A If that's the number of experts that</p> <p>16 agreed to it, then, yeah. I agree on that.</p> <p>17 MS. THOMPSON:</p> <p>18 Q And it's not that scientists can come</p> <p>19 to different conclusions. It's that 12 experts</p> <p>20 who state the same conclusions as the authors of</p> <p>21 the paper are wrong and you're right?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 MS. THOMPSON:</p>	<p>1 A Do you have an author?</p> <p>2 MS. THOMPSON:</p> <p>3 Q Same authors.</p> <p>4 A So Dr. Cramer --</p> <p>5 Q The lead author is McDonald, but from</p> <p>6 Cramer's lab --</p> <p>7 A I have seen it.</p> <p>8 Q -- and Welch. You've seen it?</p> <p>9 A Uh-huh.</p> <p>10 Q And is it your understanding that the</p> <p>11 authors -- I'll mark the McDonald paper Exhibit</p> <p>12 16.</p> <p>13 (DEPOSITION EXHIBIT NUMBER 16 WAS</p> <p>14 MARKED FOR IDENTIFICATION.)</p> <p>15 MS. THOMPSON:</p> <p>16 Q Is it your understanding that the</p> <p>17 authors specifically controlled for any</p> <p>18 possibility of contamination?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A No. That's not my understanding.</p> <p>22 MS. THOMPSON:</p> <p>23 Q Well, it's in the abstract, if we can</p> <p>24 get -- delve deeper if we need to. The authors</p>

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<p>1 said that since talc can be a surface contaminant</p> <p>2 from tissue collection preparation, digestion</p> <p>3 measurements may be influenced by contamination.</p> <p>4 Instead, because they preserve anatomic landmarks</p> <p>5 and permit identification of particles in cells</p> <p>6 and tissues polarized light microscopy and in</p> <p>7 situ SEM-EDX are recommended to assess talc in</p> <p>8 lymph nodes.</p> <p>9 And that's the methodology that the</p> <p>10 authors, the researchers, performed to assure</p> <p>11 themselves that this finding was not due to</p> <p>12 contamination; right?</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A You are reading correctly.</p> <p>16 MS. THOMPSON:</p> <p>17 Q I didn't even read that.</p> <p>18 A Oh.</p> <p>19 Q I came up with that --</p> <p>20 A Oh. I thought you were looking at the</p> <p>21 paper.</p> <p>22 Q Well, I must be right, then.</p> <p>23 A I mean, they -- they observe -- I read</p> <p>24 this -- I'll read it. "In conclusion, talc</p>	<p>1 MS. CURRY:</p> <p>2 Object to the form.</p> <p>3 A So they -- they observe -- they observe</p> <p>4 large amounts of contamination. They argue that</p> <p>5 with their technology, they can tell whether some</p> <p>6 is surface and some is internal, in lymph nodes.</p> <p>7 MS. THOMPSON:</p> <p>8 Q And they determined that some was</p> <p>9 internal; right?</p> <p>10 A I believe so.</p> <p>11 Q Probably have another, what, five</p> <p>12 minutes and then lunch, or I can do it after we</p> <p>13 come back.</p> <p>14 MS. CURRY:</p> <p>15 Is that okay with you?</p> <p>16 A That's okay.</p> <p>17 MS. CURRY:</p> <p>18 Is that okay with the court reporter?</p> <p>19 THE COURT REPORTER:</p> <p>20 That's fine. Yes.</p> <p>21 THE WITNESS:</p> <p>22 You all right? I'll stop mumbling.</p> <p>23 MS. THOMPSON:</p> <p>24 Q Okay. I want to go over just a few of</p>
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<p>1 contamination in the surface of surgical</p> <p>2 pathology specimens of is common."</p> <p>3 Q Except -- and I didn't have a question</p> <p>4 on the table.</p> <p>5 A Okay.</p> <p>6 Q So I'll object to that as being</p> <p>7 nonresponsive to a question.</p> <p>8 Except the whole purpose of this study</p> <p>9 was to, number one, expand on the case report</p> <p>10 that was published earlier; right?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A I don't see that. It's another study.</p> <p>14 MS. THOMPSON:</p> <p>15 Q Okay.</p> <p>16 A Yeah.</p> <p>17 Q But this had a series of 22 cases;</p> <p>18 right?</p> <p>19 A Twenty-two cases, correct.</p> <p>20 Q And -- and the authors concluded that</p> <p>21 by -- by using the techniques that they used in</p> <p>22 this pap- -- in this paper, they could confirm</p> <p>23 that the -- the talc in the lymph nodes was not</p> <p>24 surface contamination. Right?</p>	<p>1 your criticisms of plaintiffs' experts. And</p> <p>2 let's start with Dr. Clarke-Pearson. I believe</p> <p>3 that you have met Dr. Clarke-Pearson and know him</p> <p>4 by reputation, at least; correct?</p> <p>5 A I have.</p> <p>6 Q He's a past president, I believe, of</p> <p>7 SGO; correct?</p> <p>8 A Correct.</p> <p>9 Q And department chair at University of</p> <p>10 North Carolina, recently retired; correct?</p> <p>11 A Correct.</p> <p>12 Q And -- and you actually wrote the</p> <p>13 criticism here of Dr. Clarke-Pearson?</p> <p>14 A Correct.</p> <p>15 Q And that's your language?</p> <p>16 A Uh-huh.</p> <p>17 Q Okay. Let's just read through that.</p> <p>18 "Dr. Clarke-Pearson analogizes to the migration</p> <p>19 of sperm" -- and this is considering the</p> <p>20 migration of talc particles -- "into tubes after</p> <p>21 coitus. It is rather surprising to hear this</p> <p>22 from a gynecological oncologist."</p> <p>23 Did you look at Dr. Clarke-Pearson's</p> <p>24 references?</p>

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<p>1 A I looked at his expert report.</p> <p>2 Q Including his references?</p> <p>3 A I probably would have paged through it,</p> <p>4 yeah. Yep.</p> <p>5 Q "The obvious difficulty with this line</p> <p>6 of reasoning is the fact that spermatozoa are</p> <p>7 motile and have evolved under millions of years</p> <p>8 to be able to migrate under their own control to</p> <p>9 increase the potential to fertilize the egg.</p> <p>10 This mode of transport is not consistent with a</p> <p>11 talc particle."</p> <p>12 Did you look at Dr. Pearson's citation</p> <p>13 that describes the movement of dead sperm and</p> <p>14 talc particles through that upper genital tract?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A Yeah. I didn't see the -- I didn't see</p> <p>18 the reference on dead sperm. But --</p> <p>19 MS. THOMPSON:</p> <p>20 Q If -- if there was a reference that</p> <p>21 dead sperm moved through and moved through quite</p> <p>22 easily, then your statement that it's not</p> <p>23 analogous because spermatozoa are motile is</p> <p>24 incorrect, isn't it?</p>	<p>1 A Are they dead dead or --</p> <p>2 Q Do you think dead sperm may be motile?</p> <p>3 Do you know any -- too much about reproductive</p> <p>4 physiology?</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 A A fair amount, yeah.</p> <p>8 MS. THOMPSON:</p> <p>9 Q And you don't know whether dead sperm</p> <p>10 would be motile or not?</p> <p>11 A So how are you defining that?</p> <p>12 They're -- they're -- they've decayed? They're</p> <p>13 broken down --</p> <p>14 Q Yes.</p> <p>15 A -- or the flagella is not moving?</p> <p>16 Q The flagella is not moving in a dead</p> <p>17 sperm.</p> <p>18 A Okay.</p> <p>19 Q Is it?</p> <p>20 A I guess as you are specifically</p> <p>21 defining --</p> <p>22 Q Are you arguing me -- with me?</p> <p>23 A Can I answer?</p> <p>24 MS. CURRY:</p>
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<p>1 MS. CURRY:</p> <p>2 Object to the form.</p> <p>3 A Well, I have to see the paper, and I</p> <p>4 don't know the details.</p> <p>5 MS. THOMPSON:</p> <p>6 Q Assume with me that there is evidence</p> <p>7 published in the peer-reviewed literature that</p> <p>8 dead sperm and sperm particles move through the</p> <p>9 upper genital tract, then your statement that</p> <p>10 it's not analogous because spermatozoa are motile</p> <p>11 would be incorrect; right?</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A So these sperm would be put on the</p> <p>15 perineum like a dusting?</p> <p>16 MS. THOMPSON:</p> <p>17 Q No.</p> <p>18 A Okay.</p> <p>19 Q I'm just saying it's -- your statement</p> <p>20 that that is the reason would be incorrect.</p> <p>21 A I -- so --</p> <p>22 Q Are -- are dead sperm motile?</p> <p>23 A I don't actually know. They --</p> <p>24 Q You're --</p>	<p>1 I'm sorry. You can each just take</p> <p>2 turns. Just please let her get her question out.</p> <p>3 MS. THOMPSON:</p> <p>4 Q Do you not know whether dead sperm</p> <p>5 would be motile or not?</p> <p>6 A I would think most of the time they</p> <p>7 would not be motile.</p> <p>8 Q Okay. And would you agree that a sperm</p> <p>9 particle -- for example, if the flagellum is</p> <p>10 broken off, would you agree that would not be</p> <p>11 motile, a sperm particle?</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A Motile, moving under its own --</p> <p>15 MS. THOMPSON:</p> <p>16 Q Moving on its own.</p> <p>17 A Yeah. I think it's unlikely.</p> <p>18 Q Do you know the size of the head of a</p> <p>19 sperm?</p> <p>20 A No.</p> <p>21 Q If the reason that Dr. Clarke-Pearson</p> <p>22 was incorrect referencing dead and -- dead sperm</p> <p>23 and sperm particles moving through the upper</p> <p>24 genital tract could be relevant to a talc</p>

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<p style="text-align: right;">Page 218</p> <p>1 particle. If your reason for saying that opinion</p> <p>2 is incorrect is that sperm are motile, then that</p> <p>3 reasoning is incorrect, isn't it?</p> <p>4 MS. CURRY:</p> <p>5 Object to the form.</p> <p>6 A Well, I think in the way it's expressed</p> <p>7 here, that, obviously, it doesn't mean -- I mean,</p> <p>8 it makes no sense to apply to spermatozoa, which</p> <p>9 are mobile. But if you're telling me there's a</p> <p>10 reference for dead sperm, then the question</p> <p>11 becomes what's in that reference? So these --</p> <p>12 MS. THOMPSON:</p> <p>13 Q Okay.</p> <p>14 A -- dead sperm were deposited into the</p> <p>15 uterus after coitus and --</p> <p>16 Q We're just talking -- we're not talking</p> <p>17 about coitus.</p> <p>18 Is it plausible to you --</p> <p>19 A Okay.</p> <p>20 Q -- that a woman who has talcum on her</p> <p>21 perineum --</p> <p>22 A Uh-huh.</p> <p>23 Q -- could have coitus and the talcum</p> <p>24 powder on the perineum could be placed in the</p>	<p style="text-align: right;">Page 220</p> <p>1 Object to the form.</p> <p>2 A Yeah, I don't know what --</p> <p>3 MS. THOMPSON:</p> <p>4 Q Those are your words. Are</p> <p>5 Dr. Clarke-Pearson's opinions contrary to</p> <p>6 knowledge of basic anatomy?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A Where are you reading?</p> <p>10 MS. THOMPSON:</p> <p>11 Q Well, for right now I was just in the</p> <p>12 first paragraph of "Hypothesized migration of</p> <p>13 talc to ovaries."</p> <p>14 A What page? Is it on my report?</p> <p>15 Q Page 7.</p> <p>16 A Okay.</p> <p>17 Oh. So you're relating that statement</p> <p>18 to Clarke-Pearson?</p> <p>19 Q Well, I believe you say that all the</p> <p>20 experts have -- have a theory that's contrary to</p> <p>21 basic anatomy and common sense.</p> <p>22 A No. What that refers to, I think, is</p> <p>23 the fact that you're putting -- you're dusting</p> <p>24 the perineum many times, most of the times, in a</p>
<p style="text-align: right;">Page 219</p> <p>1 vagina forcefully? Is that plausible?</p> <p>2 A I don't have any data on that.</p> <p>3 Q Do you have to have data to say whether</p> <p>4 or not that's plausible?</p> <p>5 A I am a scientist.</p> <p>6 Q Well, maybe take off your scientist</p> <p>7 hat. Is it plausible that a woman who has talcum</p> <p>8 powder on her perineum and has sex, that the</p> <p>9 talcum powder could be forced into the vagina?</p> <p>10 MS. CURRY:</p> <p>11 Object to the form.</p> <p>12 MS. THOMPSON:</p> <p>13 Q Is it plausible?</p> <p>14 A Sexual intercourse?</p> <p>15 Q Sexual intercourse, yes.</p> <p>16 A Yes. Just getting specifics.</p> <p>17 Yeah. I mean, I -- I think the way</p> <p>18 you're hypothesizing it, I suppose there's a</p> <p>19 possibility.</p> <p>20 Q So if those things are possible and</p> <p>21 plausible, then you really don't think</p> <p>22 Dr. Clarke-Pearson's opinions are unreasonable</p> <p>23 and -- and are contrary to basic anatomy, do you?</p> <p>24 MS. CURRY:</p>	<p style="text-align: right;">Page 221</p> <p>1 woman who's vertical, and this concept is that</p> <p>2 somehow that talc and dust essentially ascends</p> <p>3 into the ovary. And I think that more often than</p> <p>4 not lacks common sense and basic anatomy because</p> <p>5 of what I just said.</p> <p>6 Now, if you want to go through each</p> <p>7 individual study, I'm happy to do that because</p> <p>8 there are methodologic flaws in them. But that</p> <p>9 statement does not relate directly to</p> <p>10 Dr. Clarke-Pearson. If it did, it would be under</p> <p>11 his name.</p> <p>12 Q But you talk generally about</p> <p>13 plaintiffs' experts, too. And do you think that</p> <p>14 you have a better understanding of female anatomy</p> <p>15 than Dr. Clarke-Pearson?</p> <p>16 MS. CURRY:</p> <p>17 Object to the form.</p> <p>18 A Dr. Clarke-Pearson's pretty good with</p> <p>19 female anatomy.</p> <p>20 MS. THOMPSON:</p> <p>21 Q Do you think you have a better</p> <p>22 understanding than Dr. Clarke-Pearson of female</p> <p>23 reproductive physiology?</p> <p>24 MS. CURRY:</p>

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<p>1 Object to the form.</p> <p>2 A No. I think he would be more versed in</p> <p>3 that.</p> <p>4 MS. THOMPSON:</p> <p>5 Q And -- and you've just testified that</p> <p>6 we're not just talking about a woman standing up</p> <p>7 and putting dusting powder and the ascension. We</p> <p>8 are talking about the possibility, in your words,</p> <p>9 that powder could be on the perineum and</p> <p>10 introduced in the vagina forcefully with sexual</p> <p>11 intercourse; right?</p> <p>12 A Well, yes --</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A We just had that conversation. I mean,</p> <p>16 again, it's hypothetical. Yeah.</p> <p>17 MS. THOMPSON:</p> <p>18 Q Okay. Agreed. I mean, I agree that's</p> <p>19 your opinion.</p> <p>20 And how about a woman who applies</p> <p>21 talcum powder to a sanitary napkin? Is it</p> <p>22 possible that the talcum powder would be</p> <p>23 introduced in the vagina through menstrual flow?</p> <p>24 A Through menstrual --</p>	<p>1 Q Do you think he would know it, what's</p> <p>2 published in literature?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A He might.</p> <p>6 MS. THOMPSON:</p> <p>7 Q So you're certainly not opining today</p> <p>8 that you have a better understanding than</p> <p>9 Dr. Clarke-Pearson of materials that can travel</p> <p>10 retrograde through the upper genital tract, do</p> <p>11 you?</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A Oh, I disagree with that.</p> <p>15 MS. THOMPSON:</p> <p>16 Q You think you do have a better</p> <p>17 understanding than Dr. Clarke-Pearson regarding</p> <p>18 whether or not particles can travel through the</p> <p>19 upper genital tract?</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A Based upon my analysis of these papers,</p> <p>23 yes.</p> <p>24 MS. THOMPSON:</p>
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<p>1 MS. CURRY:</p> <p>2 Object to the form.</p> <p>3 A Not that I know of. I don't have any</p> <p>4 data for that.</p> <p>5 MS. THOMPSON:</p> <p>6 Q Is that -- you don't think it's</p> <p>7 possible?</p> <p>8 A Again, from -- from -- it's</p> <p>9 interesting. So if menstrual flow coming out of</p> <p>10 the vagina with a sanitary napkin, the talc then</p> <p>11 gets into the vagina up to the ovaries. It</p> <p>12 doesn't make a lot of sense to me.</p> <p>13 Q What percentage of women have</p> <p>14 retrograde menstruation on a -- on a given</p> <p>15 period?</p> <p>16 A I don't understand what you mean by</p> <p>17 that.</p> <p>18 Q Do you think Dr. Clarke-Pearson</p> <p>19 probably knows that percentage?</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A I'm sure he'd probably have an opinion</p> <p>23 on it.</p> <p>24 MS. THOMPSON:</p>	<p>1 Q Well, you certainly didn't know about</p> <p>2 dead sperm and sperm particles, did you?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A Well, it's one paper.</p> <p>6 MS. THOMPSON:</p> <p>7 Q And you don't know about -- you don't</p> <p>8 know how many -- what percentage of women have</p> <p>9 retrograde menstruation, which is a classic paper</p> <p>10 in gynecology -- gynecology? You don't know that</p> <p>11 percentage, do you?</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A I can't quote you that percentage.</p> <p>15 MS. THOMPSON:</p> <p>16 Q Do you know that women oftentimes use</p> <p>17 baby powder at bedtime?</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A I guess that's possible.</p> <p>21 MS. THOMPSON:</p> <p>22 Q And that would not be in an upright</p> <p>23 position, would it?</p> <p>24 MS. CURRY:</p>

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<p>1 Object to the form.</p> <p>2 A They may have put it on in an upright</p> <p>3 position.</p> <p>4 MS. THOMPSON:</p> <p>5 Q And do you agree that women could have</p> <p>6 powder on the perineum and use a tampon?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A I assume that's possible, yes.</p> <p>10 MS. THOMPSON:</p> <p>11 Q And wouldn't it be possible that powder</p> <p>12 on a tampon could be introduced into the vagina?</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A It's possible.</p> <p>16 MS. THOMPSON:</p> <p>17 Q And what -- what did Dr. Kunz, K-U-N-Z,</p> <p>18 describe in an article regarding how particles</p> <p>19 and substances are transported to the upper</p> <p>20 genital tract?</p> <p>21 A So that's the peristaltic pump.</p> <p>22 Q And describe that for me.</p> <p>23 A Yeah. So they went and looked at the</p> <p>24 contractions -- they, first of all, tried to</p>	<p>1 Object to the form.</p> <p>2 A Yeah.</p> <p>3 The problem I have with that is I'm not</p> <p>4 sure what direction the pressure is in, because</p> <p>5 obviously if you give oxytocin at the time of</p> <p>6 pregnancy after the delivery, expels the</p> <p>7 placenta, so some of that pressure's going to</p> <p>8 come down.</p> <p>9 And, then, too, the radioactive studies</p> <p>10 are really problematic because a lot of times the</p> <p>11 label will come off of the microsphere. So you</p> <p>12 don't quite know where it's going.</p> <p>13 MS. THOMPSON:</p> <p>14 Q At what points in a female's -- in a</p> <p>15 woman's cycle are oxytocin levels the highest?</p> <p>16 A I can't quote you that.</p> <p>17 Q Would that be a question for</p> <p>18 Dr. Clarke-Pearson?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A He probably would know.</p> <p>22 MS. THOMPSON:</p> <p>23 Q And are you aware of the studies</p> <p>24 showing that not only sperm particles and dead</p>
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<p>1 measure the pressure in the uterus based on this</p> <p>2 contraction, and they used actually ultrasound to</p> <p>3 do it, which is an indirect measure, of course.</p> <p>4 Don't know really what the pressure is.</p> <p>5 Based upon finding that, then they went</p> <p>6 on to, if I recall correctly, use micro- --</p> <p>7 radiolabeled microspheres to do -- a word I can't</p> <p>8 pronounce -- hysterosalpingoscintigraphy,</p> <p>9 whatever.</p> <p>10 Q I can't either.</p> <p>11 A Yeah. And the idea was -- if I recall</p> <p>12 correctly, the idea of that whole study was</p> <p>13 actually for -- I think fertility and pregnancy.</p> <p>14 And the idea was that they then saw this</p> <p>15 radioactivity up in the areas and drew the</p> <p>16 conclusion that there is contraction to the</p> <p>17 uterus and that they were hypothesizing that the</p> <p>18 particles then were going up the tubes of the</p> <p>19 ovaries.</p> <p>20 Q So it facilitates movement through</p> <p>21 the --</p> <p>22 A Yeah.</p> <p>23 Q -- genital tract?</p> <p>24 MS. CURRY:</p>	<p>1 sperm move through the upper genital tract but</p> <p>2 even motile sperm move at a much faster rate than</p> <p>3 would be predicted strictly based on their</p> <p>4 self-generated motility?</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 A Yeah. I actually recall seeing that in</p> <p>8 a study.</p> <p>9 MS. THOMPSON:</p> <p>10 Q Are you aware that motile sperm</p> <p>11 preferentially go to the side where ovulation has</p> <p>12 occurred?</p> <p>13 A That, I'm not -- I can't quote you</p> <p>14 that. I don't know.</p> <p>15 Q So that would probably be another</p> <p>16 question for one of the gynecologists or --</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 MS. THOMPSON:</p> <p>20 Q -- gynecologic oncologists? Would you</p> <p>21 agree?</p> <p>22 A They -- they would have that, and their</p> <p>23 OB training would provide them with that</p> <p>24 information. Yeah.</p>

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<p>1 Q Let's break for lunch.</p> <p>2 VIDEOGRAPHER:</p> <p>3 Off the record at 12:55 p m.</p> <p>4 (Lunch recess.)</p> <p>5 VIDEOGRAPHER:</p> <p>6 We're back on the record at 2:02 p m.</p> <p>7 MS. THOMPSON:</p> <p>8 Q Dr. Birrer, I think we established this</p> <p>9 morning that it is your opinion that the genital</p> <p>10 use of talcum powder is not a risk factor for</p> <p>11 ovarian cancer; right?</p> <p>12 A I'm sorry. Say that -- say that again.</p> <p>13 Q It's your opinion that talcum powder is</p> <p>14 not a risk factor for ovarian cancer; right?</p> <p>15 A The use of talcum powder?</p> <p>16 Q Yes.</p> <p>17 A Correct.</p> <p>18 Q Can you point me to any article -- can</p> <p>19 you point me to an article that specifically</p> <p>20 states genital talcum powder use is not a risk</p> <p>21 factor for -- for ovarian cancer?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A That genital talcum powder use is not a</p>	<p>1 study?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 A No. I'd have to go through them. Do</p> <p>5 you have them?</p> <p>6 MS. THOMPSON:</p> <p>7 Q We're not gonna go through the 40</p> <p>8 studies, but --</p> <p>9 At least sitting here today, you can't</p> <p>10 think of one right offhand, can you?</p> <p>11 A I'm happy to go through the studies.</p> <p>12 Q Okay. Is it your opinion that genital</p> <p>13 talcum powder use has been proven to be a safe</p> <p>14 practice?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A We discussed that this morning. There</p> <p>18 is no data I know that it's an unsafe practice.</p> <p>19 That's a review of the literature. And, so,</p> <p>20 it's -- I think in that context it's safe.</p> <p>21 MS. THOMPSON:</p> <p>22 Q In your previous -- or did you look at</p> <p>23 websites when you prepared your report this time</p> <p>24 regarding talcum powder exposure and the risk for</p>
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<p>1 risk factor? I mean, if you look at the -- a lot</p> <p>2 of the case-control studies, about 40 percent of</p> <p>3 them are negative and --</p> <p>4 MS. THOMPSON:</p> <p>5 Q Well -- and by negative, you mean not</p> <p>6 statistically significant; right?</p> <p>7 A (Nods affirmatively.) Negative. And</p> <p>8 cohort studies aren't either. And -- and,</p> <p>9 actually, that -- and the cohort studies have</p> <p>10 been sort of analyzed, reanalyzed in multiple</p> <p>11 meta-analysis, and so they're all negative.</p> <p>12 Q But my question was: Did any of those</p> <p>13 studies conclude talcum powder is not a risk</p> <p>14 factor for ovarian cancer?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A So there are studies that don't show a</p> <p>18 significant association between talcum use and --</p> <p>19 MS. THOMPSON:</p> <p>20 Q But I'm looking for --</p> <p>21 A -- and ovarian cancer.</p> <p>22 Q -- the statement that genital use of</p> <p>23 talcum is not a risk factor for ovarian cancer.</p> <p>24 Do you remember seeing that in any</p>	<p>1 ovarian cancer?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 A Other than PubMed?</p> <p>5 MS. THOMPSON:</p> <p>6 Q Right.</p> <p>7 Like the American Cancer Society or NCI</p> <p>8 or any websites.</p> <p>9 A Not for this one.</p> <p>10 Q Had you looked at them before?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A I think in the previous depositions, I</p> <p>14 reported looking at one or two of them. I'd have</p> <p>15 to go back and look at that.</p> <p>16 MS. THOMPSON:</p> <p>17 Q Okay.</p> <p>18 A Yeah.</p> <p>19 Q And I think the American Cancer Society</p> <p>20 website was one of those that you looked at.</p> <p>21 Correct?</p> <p>22 A Could be.</p> <p>23 Q I'll mark 17, American Cancer Society,</p> <p>24 Talcum Powder and Cancer.</p>

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<p>1 (DEPOSITION EXHIBIT NUMBER 17 2 WAS MARKED FOR IDENTIFICATION.) 3 MS. THOMPSON: 4 Q Does that look familiar? 5 A That looks like American Cancer 6 Society's website. Because I see the logo. 7 Q And -- and would you use this statement 8 on the American Cancer Society website to be 9 support for your opinion that talcum powder use 10 is not a risk factor for ovarian cancer? 11 A Is not a risk factor? Is not? 12 Q Is not. 13 A I wouldn't refer to this, no. 14 Q Do you think that's what this document 15 states? 16 A I don't think this -- it doesn't seem 17 to me, based on what the ACS is saying -- they 18 report that their findings are mixed, with some 19 studies reporting a slightly increased risk and 20 some reporting no increase. 21 Q So the American Cancer Society, on 22 their website, states that IARC has classified 23 talc that contains asbestos as carcinogenic to 24 humans; right?</p>	<p>1 talcum powder does not increase risk, are they? 2 MS. CURRY: 3 Object to the form. 4 A Say again. 5 MS. THOMPSON: 6 Q They're not saying that talcum powder 7 use does not increase cancer risk, do they? 8 A I don't see that stated. 9 Q And -- and they say there is some 10 suggestion of a possible increase in ovarian 11 cancer risk; right? 12 A Well, the statement I see is "It's not 13 clear if consumer products containing talcum 14 increase cancer risks." That's pretty specific. 15 Q They're saying it's not clear. It's 16 not saying it's not a risk, is it? 17 MS. CURRY: 18 Object to the form. 19 A They're saying they don't know. 20 MS. THOMPSON: 21 Q Right. And then the recommendation, by 22 the American Cancer Society, would be "Until more 23 information is available, people concerned about 24 using talcum powder may want to avoid or limit</p>
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<p>1 A You're on page 3? 2 Q Yeah. 30 -- yeah, 3 of 6. 3 A Yeah. 4 Q And then based on the lack of data from 5 human studies and unlimited data in lab animal 6 studies, IARC classified inhaled talc not 7 containing asbestos as not classifiable; right? 8 A The second bullet? 9 Q The second bullet. 10 And then the third bullet is the IARC 11 that states that the perineal genital use of talc 12 powder -- talc-based body powder is possibly 13 carcinic- -- carcinogenic to humans. That's the 14 2B classification; right? 15 A 2B. 16 Q And then it states that the US National 17 Toxicology Program, NTB, has not fully reviewed 18 talc with or without asbestos as a possible 19 carcinogen; right? That's what it says. 20 A Correct. 21 Q And, then, as -- as you said, the ACS 22 states it's not clear if consumer products 23 containing talcum powder increase cancer risk. 24 They're certainly not saying that</p>	<p>1 their use of consumer products that contain it." 2 But you think any recommendation of 3 that kind is not indicated; correct? 4 MS. CURRY: 5 Object to the form. 6 A Well, it depends on how you read that. 7 I mean, I think what they're suggesting is that 8 people concerned about using talcum powder, for 9 whatever reason, may want to avoid or limit their 10 use of consumer products that contain it and 11 implies that it's the stress of knowing they're 12 using it because of what they've interpreted. It 13 doesn't really make any conclusions about talcum 14 powder. 15 MS. THOMPSON: 16 Q Are there any medical benefits that 17 you're aware of from the genital use of talcum 18 powder? 19 A Well, I think it's generally used to 20 absorb -- absorb fluid. It's -- a lot of women 21 like it. It's a body image issue. You know, so 22 I think those issues -- and again, I treat a lot 23 of women with ovarian cancer -- are important. 24 Q That wasn't my question.</p>

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<p>1 Are there any medical benefits to the</p> <p>2 genital use of talcum powder?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A That is a medical use?</p> <p>6 MS. THOMPSON:</p> <p>7 Q Are there any benefits, is the</p> <p>8 question.</p> <p>9 A Yeah.</p> <p>10 MS. CURRY:</p> <p>11 Object to the form.</p> <p>12 MS. THOMPSON:</p> <p>13 Q Where are -- where are those benefits</p> <p>14 reported?</p> <p>15 A That's quality of life.</p> <p>16 Q Where in the medical literature can you</p> <p>17 show a report that describes medical benefits</p> <p>18 from the genital use of talcum powder?</p> <p>19 A Well, it's not in -- and again, I</p> <p>20 didn't review that for this expert report, so --</p> <p>21 but you're asking me.</p> <p>22 Q When you -- if you're trying to make a</p> <p>23 risk assessment, wouldn't you know if you're</p> <p>24 weighing the benefits versus the potential risks?</p>	<p>1 A Again, you asked me the question about</p> <p>2 do I think there's some medical benefit. I --</p> <p>3 the answer is yes. I mean --</p> <p>4 MS. THOMPSON:</p> <p>5 Q But that's never been published</p> <p>6 anywhere that you're aware of, has it?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A As I said before, I -- I can't quote</p> <p>10 you that.</p> <p>11 MS. THOMPSON:</p> <p>12 Q Is it -- have you seen in the medical</p> <p>13 literature that there are no benefits, medical</p> <p>14 benefits from the use of talcum powder in the</p> <p>15 genital area?</p> <p>16 MS. CURRY:</p> <p>17 Object to the form.</p> <p>18 A I don't think I've actually seen that.</p> <p>19 MS. THOMPSON:</p> <p>20 Q Would you be surprised if there are</p> <p>21 references in numerous articles that say because</p> <p>22 there are no medical benefits of talcum powder</p> <p>23 use, it's not recommended?</p> <p>24 MS. CURRY:</p>
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<p>1 A Well, I evaluated the risks, and there</p> <p>2 are none.</p> <p>3 Q So you just evaluated the risk and</p> <p>4 it -- it wouldn't matter to you whether there</p> <p>5 were benefits or not.</p> <p>6 A Well, my benefit --</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A I'm sorry. Go ahead. I'm sorry.</p> <p>10 Yeah. My benefit would be based upon</p> <p>11 my own experience. It's not necessarily</p> <p>12 published in medical literature.</p> <p>13 MS. THOMPSON:</p> <p>14 Q Okay. Well, that would certainly be</p> <p>15 anecdotal, wouldn't it?</p> <p>16 MS. CURRY:</p> <p>17 Object to the form.</p> <p>18 A Well, you know, I've got a lot of</p> <p>19 experience.</p> <p>20 MS. THOMPSON:</p> <p>21 Q It's still anecdotal, isn't it,</p> <p>22 Dr. Birrer?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>	<p>1 Object to the form.</p> <p>2 A I'd be happy to -- I'd be happy to</p> <p>3 review them.</p> <p>4 MS. THOMPSON:</p> <p>5 Q Have you seen in the medical literature</p> <p>6 that cornstarch products are recommended if women</p> <p>7 choose to use a dusting powder over talcum</p> <p>8 powder?</p> <p>9 A Can you repeat that? I -- the cough.</p> <p>10 Q Have you seen in the medical literature</p> <p>11 that -- where cornstarch products are recommended</p> <p>12 if women choose to use a dusting powder over</p> <p>13 talcum powder?</p> <p>14 A You know, I haven't seen the -- I</p> <p>15 haven't seen the medical literature recommending</p> <p>16 cornstarch over talcum. But I have seen -- I've</p> <p>17 seen discussions about women who use cornstarch.</p> <p>18 Q And again, there have never been any</p> <p>19 risks that you're aware of into -- related to the</p> <p>20 genital use of cornstarch products and the link</p> <p>21 with ovarian cancer; right?</p> <p>22 A I don't know of any.</p> <p>23 Q You mentioned earlier this morning the</p> <p>24 National Academy of Science, Engineering and</p>

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<p>1 Medicine as a -- as a -- possibly the most</p> <p>2 reputable source of credible information.</p> <p>3 Would -- did I describe that sort of</p> <p>4 correctly?</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 A I don't recall saying it's the most,</p> <p>8 but I used it in context of comparing IARC, if I</p> <p>9 recall correctly, versus some other sort of pure</p> <p>10 scientific professional organization, which I</p> <p>11 would include the National Academy to be that.</p> <p>12 MS. THOMPSON:</p> <p>13 Q Okay. Fair enough.</p> <p>14 And I'm sure you're familiar with the</p> <p>15 treatise -- it's actually -- came out in book</p> <p>16 form -- of the study by the Institute of</p> <p>17 Medicine, I believe, at that time, on ovarian</p> <p>18 cancer?</p> <p>19 A Yes.</p> <p>20 Q Did you participate at all in that</p> <p>21 study?</p> <p>22 A They asked me to review it.</p> <p>23 Q You were one of the reviewers?</p> <p>24 A They asked me to review it.</p>	<p>1 Q I'll give it to you in a minute.</p> <p>2 A Okay.</p> <p>3 Q I just want to ask you a few questions</p> <p>4 first.</p> <p>5 Why did you decline to review?</p> <p>6 A I was too busy.</p> <p>7 Q Okay. Because it was a big book?</p> <p>8 A It's monstrous.</p> <p>9 Q However, several of the authors have</p> <p>10 been coauthors with you on -- on papers. Is one</p> <p>11 of them Dr. Karlan?</p> <p>12 A I believe I've been on papers with</p> <p>13 Beth. And I think Anil Sood was on there, too.</p> <p>14 THE COURT REPORTER:</p> <p>15 Excuse me?</p> <p>16 THE WITNESS:</p> <p>17 Anil Sood, S-O-O-D.</p> <p>18 MS. THOMPSON:</p> <p>19 Q And Ronald Alvarez -- Alvarez published</p> <p>20 with you, I think?</p> <p>21 A I believe so.</p> <p>22 Q Dr. Karlan's published with you.</p> <p>23 A (Nods affirmatively.)</p> <p>24 Q Dr. Levine has published with you?</p>
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<p>1 Q Oh.</p> <p>2 A I declined.</p> <p>3 Q They asked you to review it and you did</p> <p>4 not review it. That explains it, because I</p> <p>5 didn't see your name on the list.</p> <p>6 And that was published in 2016?</p> <p>7 A Uh-huh.</p> <p>8 Q And what was your understanding of the</p> <p>9 purpose of that study?</p> <p>10 MS. CURRY:</p> <p>11 Object to the form.</p> <p>12 A It -- I -- you know, I think it was --</p> <p>13 this is -- it's just medicine undertakes this</p> <p>14 periodically for large topics, and that was one</p> <p>15 of them, to sort of summarize the state of the</p> <p>16 science.</p> <p>17 MS. THOMPSON:</p> <p>18 Q And the -- in fact, the committee that</p> <p>19 did the study was a committee on the state of the</p> <p>20 science in ovarian cancer research; is that</p> <p>21 correct? So you called --</p> <p>22 A This is the one by Beth Karlan?</p> <p>23 Q Yeah.</p> <p>24 A Yeah.</p>	<p>1 A Doug and I are on a couple of papers,</p> <p>2 yeah.</p> <p>3 Q Doug Levine?</p> <p>4 A Yeah.</p> <p>5 Q Dr. Odunsi, Kunle Odunsi --</p> <p>6 A Kunle. Kunle.</p> <p>7 Q -- has published with you. And</p> <p>8 Dr. Sood you mentioned; right?</p> <p>9 And Dr. -- is it Tworoger or --</p> <p>10 A Two- -- Twergger?</p> <p>11 Q -- Two- -- Twoauger?</p> <p>12 A T-W-O-G-G-E-R [sic].</p> <p>13 Q Has published with you?</p> <p>14 A I think so, yes. I'd have to check</p> <p>15 that.</p> <p>16 Q So you were, I would say, well</p> <p>17 represented on the --</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A Well, I know them.</p> <p>21 MS. THOMPSON:</p> <p>22 Q -- on the author list?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>

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<p>1 MS. THOMPSON:</p> <p>2 Q And -- and I assume you would agree</p> <p>3 with me that the committee to report on the state</p> <p>4 of the science of ovarian cancer research was</p> <p>5 selected because of their expertise in the area;</p> <p>6 correct?</p> <p>7 A Yes.</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 MS. THOMPSON:</p> <p>11 Q And, as we mentioned, this study was</p> <p>12 under the auspices of the National Academy of</p> <p>13 Science, Medicine and Engineering, Institute of</p> <p>14 Medicine, I believe, originally; correct?</p> <p>15 A Correct.</p> <p>16 Q And is it your understanding that this</p> <p>17 study was also supported by the CDC?</p> <p>18 A That, I don't know.</p> <p>19 Q All right. Let me just go ahead and</p> <p>20 give it to you.</p> <p>21 A Yeah.</p> <p>22 (DEPOSITION EXHIBIT NUMBER 18 WAS</p> <p>23 MARKED FOR IDENTIFICATION.)</p> <p>24 MS. THOMPSON:</p>	<p>1 A Correct.</p> <p>2 Q The State of the Science authors state,</p> <p>3 under "Inflammation," "Studies of the</p> <p>4 inflammatory marker C-reactive protein suggest a</p> <p>5 possible association between inflammation and</p> <p>6 increased risk of ovarian cancer," citing OC and</p> <p>7 Poole.</p> <p>8 "Other specific inflammatory factors</p> <p>9 have also been associated with ovarian cancer."</p> <p>10 Do you agree that the authors of this</p> <p>11 treatise reported that there's a possible</p> <p>12 association between inflammation and increased</p> <p>13 risk for ovarian cancer?</p> <p>14 A Well, on these -- on these two</p> <p>15 sentences, I think they accurately stated,</p> <p>16 "suggests association." And then they refer -- I</p> <p>17 don't -- these two papers, I can't directly quote</p> <p>18 you. I mean --</p> <p>19 Q And I -- and I'm not --</p> <p>20 A Yeah.</p> <p>21 Q -- suggesting that they do anything</p> <p>22 other than suggest the possible association.</p> <p>23 A Right.</p> <p>24 Q I'm not trying to read more into it.</p>
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<p>1 Q Exhibit 18 I'm marking as Ovarian</p> <p>2 Cancers, Evolving Paradigms in Research and Care.</p> <p>3 And this is not the entire book, but it is the</p> <p>4 entire chapter that we're going to look at, which</p> <p>5 is "Prevention and Early Detection," Chapter 3.</p> <p>6 And if you look on page little ix, page</p> <p>7 9, preface --</p> <p>8 A 9? 9?</p> <p>9 Q Little nine.</p> <p>10 A Yeah.</p> <p>11 Q Yeah. The -- the first sentence, "This</p> <p>12 congressionally mandated report sponsored by the</p> <p>13 Centers For Disease Control and Prevention</p> <p>14 assesses the state of research on ovarian cancers</p> <p>15 from multiple perspectives and by multiple</p> <p>16 disciplines."</p> <p>17 So do you agree that the Center For</p> <p>18 Disease Control sponsored the study?</p> <p>19 A Correct.</p> <p>20 Q If you'll turn to page -- I don't have</p> <p>21 pages on my copy. Page 110. Under the section</p> <p>22 heading "Inflammation." And this is in a larger</p> <p>23 section titled "Behavioral and Inflammatory Risk</p> <p>24 Factors"; correct?</p>	<p>1 A Okay.</p> <p>2 Q And then they describe "A meta-analysis</p> <p>3 reported that exposure to asbestos was associated</p> <p>4 with a 77 percent increased risk of ovarian</p> <p>5 cancer mortality," citing Carmargo.</p> <p>6 Are you familiar with that paper?</p> <p>7 A I am familiar with that. That's the</p> <p>8 occasional exposure, if I recall correctly.</p> <p>9 Q And "The International Agency For</p> <p>10 Research on Cancer determined that there was</p> <p>11 sufficient evidence to support a causal</p> <p>12 relationship between asbestos exposure and</p> <p>13 ovarian cancer."</p> <p>14 So the authors of this treatise include</p> <p>15 exposure to asbestos and its association with</p> <p>16 ovarian cancer in the Inflammation section of --</p> <p>17 of risk factors; right?</p> <p>18 A Say that again? Sorry. For asbestos?</p> <p>19 Q The authors of this treatise include</p> <p>20 exposure to asbestos and its association with</p> <p>21 ovarian cancer in the Inflammation section of</p> <p>22 risk factors; right?</p> <p>23 A Correct.</p> <p>24 Q They go on to say, "This has led to</p>

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<p>1 studies of talc use which is chemically similar</p> <p>2 to asbestos and can cause an inflammatory</p> <p>3 response."</p> <p>4 Do you agree with that statement?</p> <p>5 A I -- I actually hesitate a little on</p> <p>6 that because I'm not so sure that that's a</p> <p>7 temporal relationship, that it was the asbestos</p> <p>8 association that then led to the investigation of</p> <p>9 talc. I don't know, when Dan Cramer published</p> <p>10 his first paper, that's what was driving him.</p> <p>11 Q Do you have any other disagreement with</p> <p>12 the -- the statement other than whether it led to</p> <p>13 the studies of talc use?</p> <p>14 MS. CURRY:</p> <p>15 Object to the form.</p> <p>16 A I don't know. Again, we've covered</p> <p>17 this. I'm not a mineralogist, so I don't know</p> <p>18 the similarity issues. And inflammatory response</p> <p>19 is not defined. So other than that, it's fine.</p> <p>20 MS. THOMPSON:</p> <p>21 Q Well, the authors -- let's take out the</p> <p>22 asbestos and say "Talc can cause inflammatory</p> <p>23 response." Do you agree or disagree with that?</p> <p>24 A Well, inflammation is a broad issue and</p>	<p>1 one else anywhere in the literature to question</p> <p>2 even this, I don't agree with.</p> <p>3 MS. THOMPSON:</p> <p>4 Q Okay. So you -- so you disagree with</p> <p>5 the authors including that statement in -- in</p> <p>6 this treatise?</p> <p>7 A I just think it's not defined. They</p> <p>8 defined it, then I would have felt a lot better.</p> <p>9 Can cause granulomas inflammatory response. That</p> <p>10 would have been more accurate.</p> <p>11 Q I can understand that you think it</p> <p>12 should have been defined better.</p> <p>13 A Yeah.</p> <p>14 Q But do you agree with the statement</p> <p>15 that's in this treatise, or disagree?</p> <p>16 MS. CURRY:</p> <p>17 Object to the form.</p> <p>18 A No opinion.</p> <p>19 MS. THOMPSON:</p> <p>20 Q But you'll agree that at least these</p> <p>21 experts thought it was worthwhile putting the</p> <p>22 statement in this State of the Science treatise</p> <p>23 on ovarian cancer published in 2016; right?</p> <p>24 MS. CURRY:</p>
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<p>1 it's very relevant to this debate, which is are</p> <p>2 we talking granulomas, acute, chronic but</p> <p>3 nongranuloma? I think that's a big issue.</p> <p>4 Q Well, these were the authors that were</p> <p>5 selected because of their expertise to do a State</p> <p>6 of the Science treatise at the behest of the</p> <p>7 National Academy of Science and CDC.</p> <p>8 I'm just asking you do you agree with</p> <p>9 the statement "Talc can cause an inflammatory</p> <p>10 response"?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A And -- and I'm -- I'm answering it.</p> <p>14 MS. THOMPSON:</p> <p>15 Q And you say you don't know? You can't</p> <p>16 agree or disagree? Is that what you're saying?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A The inflammation is not defined. I</p> <p>20 don't know if the similarity between asbestos and</p> <p>21 talc. So other than that, I think it's fine.</p> <p>22 But the -- the -- the implication that all of the</p> <p>23 ovarian cancer experts are on this -- on this --</p> <p>24 on this report and there are no one -- there's no</p>	<p>1 Object to the form.</p> <p>2 A Yeah. Apparently.</p> <p>3 MS. THOMPSON:</p> <p>4 Q Do you know Jason Wright?</p> <p>5 A Division head at Columbia?</p> <p>6 Q Yes.</p> <p>7 A I do know Jason. Not -- I know him by</p> <p>8 reputation. I don't think I've ever actually met</p> <p>9 him.</p> <p>10 Q And what is his reputation?</p> <p>11 A I think he's got a good reputation</p> <p>12 running his division, and he's a good surgeon.</p> <p>13 Q Have you ever published with Jason</p> <p>14 Wright?</p> <p>15 A I don't believe so.</p> <p>16 Q You're right. That was a trick</p> <p>17 question.</p> <p>18 I'm gonna mark --</p> <p>19 MS. CURRY:</p> <p>20 I should have objected.</p> <p>21 (DEPOSITION EXHIBIT NUMBER 19</p> <p>22 WAS MARKED FOR IDENTIFICATION.)</p> <p>23 MS. THOMPSON:</p> <p>24 I'm gonna mark just a short article of</p>

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